e Iron

READING MATTER PAGE 32.

A Review of the Hardware, Iron and Metal Trades.

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ment of the various parts. Thus in the model before you -which is that of a 12-ton smelting furnace—there is the melting chamber or fur-nace proper, and four re-generative chambers, two for gas and two for air. But instead of the furnace and regenerators forming parts of one structure of brickwork, they are separate from each other, and are contained in circular casings of wrought iron or steel plates riveted together; and not only are the regenerators separate from the furnace, but they are separate one from the other, as shown by the model and the diagrams. From these it will be seen that the arrangement consists of a given rangement consists of a cir-cular furnace body, placed on a platform supported by girders, while the regenera-tive chambers are placed in pairs at each end of the fur-The furnace is thus left entirely clear underneath, a condition of things which insures the bottom being kept cool, and lessens the likeli-hood of the charge breaking through. The regenerators, not being underneath the furnace, are out of harm's way in the event of a break out; and, further, it will be observed that the regenera-tors have nothing but their own weight to carry, and can never get out of shape. The furnace is not supported in

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furnace is not supported in any way by the generators, and this is a feature in the design which must commend itself, for a worse support than a mass of white-hot brickwork on which to carry the weight of a furnace and its load of metal can scarcely be conceived.

With the exception of usbe conceived.

With the exception of using dampers to separately control the passage of the products of combustion through the gas and air chambers, no change has been made in the flue and valve arrangements. It is very necessary to be able to regulate the relative amounts of the heated gases passing through the regenerators, because it is generators, because it is thereby possible to regulate the relative amounts of heat stored up in the different chambers. Without this separate control the tendency for the gas regenerator the waste heat, whereas it is more necessary that the air regenerator should be the more highly heated.

Before describing the fur-nace in detail it may be of interest to show how it originated, the more especially as the steps are instructive. The design is really the outcome of experiments instituted by Mr. Riley in 1880 at the New ton Works of the Steel Com any of Scotland, Limited, the basic lining for use in the Siemens furnace. The difficulties then encountered gave rise to various changes in design, which eventually culminated in the form now

A New Form of Regenerative Furnace.*

I have pleasure in bringing to your notice a new form of regenerative furnace, in which considerable departures are made from the sual practice of furnace-building. The furnace—which is the joint invention of Mr. Planes Riley and myself—presents several novel features, and in its design we have aimed at decreasing the coast of construction and maintenance, and even adding to, the good points of the ordinary Siemens furnace. The new furnace does not in any way differ in principle from the Siemens furnace, but only in construction and arrangement of the various parts.

The we pleasure in bringing to your notice a mew form of regenerative furnace, in which considerable departures are made from the sum practice of furnaces pushed in the casing and binding of furnaces played in the first cost had been so forcibly brought the casing and binding of furnaces played in the first cost had been so forcibly brought the casing and binding of furnaces played in the first cost had been so forcibly brought the casing and binding of furnaces played in the first cost had been so forcibly brought the casing and binding of furnaces played in the first cost had been so forcibly brought the casing and binding of furnaces going out of have a cost of construction and maintenance, and extension of the caid and basic mate the casing and binding of furnaces going out of having a movable bottom resting on a carne flux were also reduced to mere iron shells the casing and binding of furnaces going out of the caid and basic mate the casing and binding of furnaces going out of have a cost of construction and maintenance, and extension of the caid and basic mate the casing and binding of furnaces going out of the casing and binding of furnaces going out of have a cost of construction of the gas and air to gether, where the like the case of an ordinary Siemens furnace, and close to it. Some useful extension of the caid and basic mate the casing and binding of furnaces going out of have a cost of constructio

Fig. t .- Longitudinal Section of Heating Furnace.

Fig. 2.—Sectional Plan of Heating Furnace.

curred. Some useful experi-ence and a good deal of confidence have been derived from its working; so much so, that we are now proceedso, that we are now proceeding with a 12-ton furnace, of which Figs. 4, 5, 6 and 7 show the design. It was at first thought that, as the flame does not travel along the roof, it would be possible to use common fire-bricks for the crown. These bricks began to run in a short time, and had to be replaced by silica bricks. Shortly after the furnace started work, one of the gas regenerators got choked, owing to a careless furnaceman neglecting to reverse. The cover was lifted, a few of the top courses of bricks raked out, fresh ones put in and the furnace started within three hours, and without being appreciably cooled.

In emptying and renewing an ordinary Siemens chamber—and it usually must be completely emptied, no half measures being possible—the quickest time on record that I know of its 24 boyrs. that I know of is 24 hours, and that is a remarkable feat.* The saving of time in repairs is thus not one of the least advantages in this type of furnace. There is likely also to be less occasion for repair than usual. The for repair than usual. The furnace has been at work for too short a period to en-able us to give this assertion all the weight we could wish. It can only be said that after five months' work the furnace is practically as good as new. The furnace is lined with 14 inches of silica bricks, and the regenerators with 9 inches of fire-brick work. The radiation is very slight indeed. The hand can be held within ¼ inch of the iron easing without discom-

Figs. 4, 5, 6 and 7 show the design of the 12-ton fur-nace to be erected at our Blochairn Works. The body has a 14-inch silica-brick wall built in an outer shell of 16-inch steel plates. The in-ternal diameter is II feet 6 inches. The roof is of silica bricks q inches thick, is domeshaped, and is bound by a T-iron ring, so that there is no thrust on the furnace walls, and the roof may be lifted off or on in one piece. There being no blocks in the furnace, and no thick places in the walls, it is equally cool all round. The bottom rests on the common flooring plates, and the air has perfectly free

access to these plates. The gas regenerators and the air regenerators are 6 feet 6 inches internal dia-meter, are lined with 9-inch fire-brick work, and have outside casings of parinch steel plates. They stand loosely on the floor, carry only their own weight, and are only connected to the furnace by the Batho tubes. They are provided with doors at different levels for convenience in filling in or emp-tying the checker-work, and

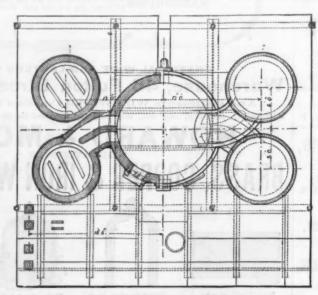


Fig. 6.-Horizontal Section and Plan of Regenerative Furnace.

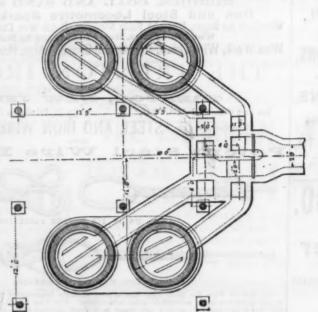


Fig. 7.—Horizontal Section of Regenerative Furnace,

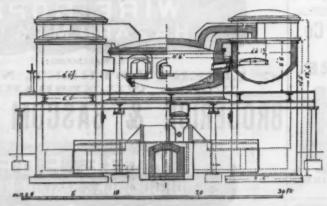


Fig. 4.—Section and Elevation of Regenerative Furnace.

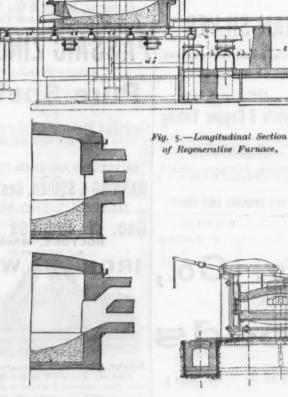


Fig. 8 .- Blocks for the Introduction of Gas and Air.

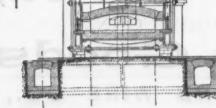


Fig. 3 -Cross-Section of Heating Furnace.

A NEW FORM OF REGENERATIVE FURNACE, INVENTED BY MESSRS, DICK AND RILEY, GLASGOW, SCOTLAND.

ulminated in the form new before you. At 4-ton furnace of the usual type was used for the trials. The first trouble encountered arcsed from the excessive quantity of sigs. This is due to the disposition and the difference form the excessive quantity of sigs. This led us to originate the design than the tap-hole. The bottom of such a large furnace proved troublescene and a large furnace horizontal cast-iron griders, of the received troublescene and had time been positively determined. For this reason it was resolved to build a smaller this reason it was resolved to build a smaller of the reception of the slag-point, continuous for the same of the structure of the sing-point, continuous forms of the continuous design, and with the exception of the slag-point, continuous design, and with the exception of the slag-point, continuous design, and sits in a frame of malleabli-root designable difficulty was experienced at large forms of the same of the slag-point, continuous design, and sits in a frame of malleabli-root designable difficulty was experienced at large furnace for use in this reason it was resolved to build a smaller time been positively determined. For this reason it was resolved to build a smaller time been positively determined. For this reason it was resolved to build a smaller time considerable difficulty uses experienced at large furnace for use in this reason it was resolved to build a smaller time been positively determined. For this reason it was resolved to build a smaller time considerable difficulty uses experienced at large furnace for use in this reason it was resolved to build a smaller time state of the floor. These griders are held apart by light cast-root edsignade a 2-ton furnace for use in this reason it was resolved to build a smaller time state of the floor. These griders are held apart by light cast-root edsignade a 2-ton furnace for use in this reason it was resolved to build a small end to the same of the floor of the same and the difference of the floor. These griders are held apa

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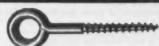
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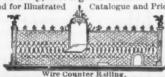




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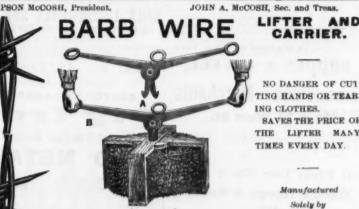


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(Continued from page 1.)

that billets may be charged on one side and that billets may be charged on one side and drawn at the other. The body is carried by two iron girders, which rest on brick piers at the ends, leaving a free space under the furnace, so that rods from the mill may be run under it if necessary. It would be possible to move this furnace from one position to another without pulling it down. It may to another without pulling it down. It may interest some of you to know that furnaces on this plan are likely to come into use for foundry purposes and for glass-making. The circular body is peculiarly adapted for glass-making purposes, where several men have to work around one furnace.

The advantages of the system are briefly these: From the independence of the parts, from the fact that the brickwork has not to be made to support heavy weights, and from the simplified casings possible with the cir-cular form, the amount of material required in the construction, the labor in erecting, and, as a consequence, the first cost, is reduced to a minimum. The cost of melting furnaces on this plan is less than three fourths of the cost of the common type of furnace of equal capacity. The repairs and up keep are slight. That this is not altogether a matter of belief is shown by the condition of the 4-ton furnace after five months work, and by the case I have instanced of a speedy repair of a choked regenerator. In this connection it should be pointed out that a spare surface cover may be kept; or, if this is not considered desirable, then, in the event of the roof falling in, the binding ring may be lifted off and placed on the floor, a new roof built in it, and the whole lifted bodily into place in the course of four or five hours, without specially cooling the furnace. When a roof collapses in a Siemens furnace the structure has to be cooled down and centering put in on which to rebuild the roof. The roof of the new furnace is not, however, much affected, as it is removed from the cutting action of the flame.

From a consideration of the form of the parts, and the manner of casing, it will be admited that the furnace is not likely to give trouble by getting out of shape. The lining of the furnace cannot readily drop in, as it is "arched" all round. It will be no-ticed from the plan that what are practically Old Rails, Wrought and Cast ticed from the plan that what are practically idle corners in a rectangular furnace are Scrap, Iron and Steel Blooms and Billets.

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Everyther, the furnace, instead of clinging to the coal to receive the furnace, instead of clinging to the coal to receive the furnace, instead of clinging to the coal to receive the furnace, instead of clinging to the coal to receive the furnace walls received. AGENTS FOR: Brier Hill Iron and Coal Co., Pig Iron. Low Moor Iron Co., of Virginia, Pig Iron. Mount Hope Special Strength Charcoal Pig Iron. Youngstown Steel Co. Washed Metal, for Open Hearth and Crucible purposes. Connelisville Coke. Low Phosphorus Bessemer Pig Iron a Specialty. walls. Further, the furnace walls recede just where the flame is most expanded. For these reasons the lining is much less liable to cut than in the rectangular furnace. This statement is borne out by our experience. The whole surface is so open to the air that Ine whole surface is so open to the air that a break-out is not likely to occur; but, should it happen, very little harm can be done, since there is nothing under the furnace to come to grief. As the regenerators are quite separated from each other, and as the gas and air tubes are also apart, there can be no leakage from one to the other, and, therefore we combustion can take place or. be no leakage from one to the other, and, therefore, no combustion can take place except in the furnace. This is a very important point and rids us of a very pregnant source of trouble in the shape of undue wear and tear caused by gases burning in the ports and chambers. Being cased in tightiron coverings, no cold air can be drawn into the regenerators or flues. Leakage in this direction frequently gives rise to much loss of heat. Sheridan, Leesport, Temple, Lynchburg, Millcreek and Mt. loss of heat.

When the regenerators become choked, When the regenerators become choked, the covers may be lifted and the chambers examined separately before commencing operations. Any one chamber, or the furnace itself, may be cut out of the system, cooled down and repaired, without cooling or in any way disturbing the other parts. The saving of time in effecting repairs is very great. The removal of a few of the top courses of checker bricks will generally be found to put the regenerators in order. top courses of checker bricks will generally be found to put the regenerators in order. Compare this with the usual necessity of waiting till the whole mass of a furnace cools, and taking out the whole of the checker-work to get at those bricks on the top. It seems to me almost superfluous to point out the peculiar adaptability of this furnace for the basic process. It is not even necessary to use basic bricks, since the circular body can be rammed with the same accessary to use basic bricas, since the cir-cular body can be rammed with the same ease as a Bessemer converter. The easy and complete severance which can be made between the basic and acid lining renders the production of basic steel in the open-hearth furnace both possible and feasible. It is the intention of the Steel Company shortly to resume experiments in basic working, and, with the new furnace, success is confidently anticipated.

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Yü, all the common metals are mentioned in a list of tribute offered the Emperor. Fifty years before the Emperor Shun had buried gold to make the people less covetous. A stone hatchet has lately been found near Kalgan in a mound 40 feet high. The mound and others in its neighborhood are said to resemble those of Ohio, and the hatchet is not to be distinguished from those of the "mound builders" in Ohio musuems.

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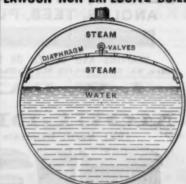
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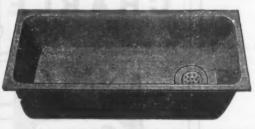
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greatest quantity of petroleum has always been obtained from the plateau about 8 miles to the north of Baku, upon which the village of Balakhany is situated. From time immemorial wells have been dug there, and the thick, viscid, greenish-brown liquid which cozed from the soil has been put into goatskins (called voordooks), and carried on the backs of camels to the villages in the interior. The strings of camels bearing these primitive bottles may be seen at the present day winding their way over the desert tracks, on their journey to the towns and villages of Dagheston. Afterward came the era of barrels. No wood grows along the arid shores of the Caspian; and the steppes of Southern Russia, however generous the soil may be, are now deprived of all the forests which once existed there. Bar-rels of wood had, therefore, to be brought from the Volga and the Kama, and from the smaller tributaties which flow through the entirely the same manner. The arbas are the strangest of vehicles drawn by horses. Two enormous wheels, generally about 7 feet in diameter, are fastened to an axle which rotates with them. Above the shafts is a small wooden framework in which part of the load is carried, while hanging below the shafts is the other part. A stalwart Tartar, with huge sheepskin cap, is generally perched on the top, and the arba, into the construction of which no iron enters, groans

construction of which no from enters, groans as it slowly moves toward the town.

At present the operations of the petroleum industry are conducted thus: Wells are sunk on the plateau of Balakhany, from whence almost the whole of the oil is now obtained. The area now being worked for oil is only about 3 or 4 square miles. This is known to be but a small fraction of the total area of the petroleum field, yet the quantity of oil obtained is so very great that no inducement exists for risking the expense of boring in less favorably situated places. There are about 400 wells in the area referred to, and this number is being constantly increased. The wells vary in depth considerably. Be-fore boring was introduced they were from 30 to 150 feet deep, but now they go down as much as 700 feet. The boring system as much as 700 teet. The boring system used is a modification of the American; sometimes ropes are used and sometimes thick- iron drilling rods. A heavy lever driven by a steam engine strikes the blows which force the chisel through the soil. All the wells are cased with tubing. The first series is made of wrought iron, is ge..erally 15 inches in diameter, and goes down to a depth often of about 40 or 50 fathoms. When this pipe ceases to run down (each section of about 7 feet being riveted to the preceding), another series, 12½ inches in diameter, is introduced. When this in turn comes to a stop, another series, 10½ inches in diameter, is introduced. The last series of these concentric tubes is 8 inches in diameter. Being centric tubes is 8 inches in diameter. Being made of thick "drawn wrought iron," force can be used if it should show signs of refusing

can be used it it should show signs of refusing to sink with the deepening of the bore.

The strata are so very irregular that it is impossible to predict the depth at which the oil will be found. The wells a few years ago were about 300 feet in depth. Aterward 500 feet became the average. To-day the richest wells are those which are 600 feet in depth. depth. A few of these wells have given quantities of oil so great as to seem fabulous. One of the most famous is that of the Droojba Company, the loss of oil from which raised much indignation in Russia. It belongs to an Armenian company, which was almost ruined through the claims brought against it on account of the damage done to the neighboring property by the overflow of oil. It is now surrounded by a huge bank of sand, which was thrown up with the oil. So great was the quantity of sand that a house close to the well was quite buried. This fountain to the well was quite buried. This fountain commenced to spout on August 18, and it continued until December 14. At first it gave 50,000 barrels in the 24 hours. This became gradually reduced to 25,000, then to 10,000 and to 8000, when at last it stopped. Two other wells belonging to Mr. Nobel—Nos. 9 and 25—gave almost similar quantities While referring to the latter, an interesting fact may be mentioned. This well still gives off gas at a very great pressure—a gauge has shown more than 200 pounds to the square inch—which has been used for drilling other wells, instead of steam. The gas is simply led into the boilers, and the pressure regulated by a stop-cock to 55 pounds, and one can see the strange phenomenon of a steam engine working with no fires enough of the Westphalian mines were so satisfactory that his proposition was enon of a steam engine working with no fires beneath the boilers, everything being perfectly cold. Stones have been thrown to a hight of 900 feet by the pressure of the gas. Of course it was found that, with such large quantities of oil gushing forth on the mere sinking of a well, the voordooks and arbas were insufficient for the transports. Mr. No-bel accordingly laid a line of iron pipes, but this provoked the liveliest opposition from the Tartars and others who were engaged in the transport. So great, indeed, was their anger that they threatened to destroy the pipe. Armed watchmen were accordingly placed in little stone houses—detached forts, in fact—to guard the structure upon which depended the feeble life of the new-torn industry. In time, however, other capitalists followed the example of Mr. No-bel, and now there are about half a dozen pipes, of which the two largest belong to the man who has been so often mentioned. The Tartars found other employment as the industry became developed, and now these watch-houses are going to ruin. Thus an

uninterrupted supply of oil was now guaranteed at Baku, where the refineries are situ-

ated and whence the refined oil can be

shipped to its destination.

Methods of Obtaining Caspian Crude Oil.

Of all the oil springs in the Caucasus the which it is embellished are evidently the work of some prehistoric engraver. Who were the forgers of this weapon is a question which Dr. Goss discusses at some length, and, having regard to the undoubted skill of the Lacustrians as metal-workers and to other circumstances, he leans decidedly to the opinion that it was wrought by them-selves; yet, seeing that no other arm of the same material has been found elsewhere, the same material has been found elsewhere, the correctness of this conclusion is perhaps open to doubt. Among other objects brought to light by the labors of Dr. Goss are bronze daggers, highly-ornamented hatchets, chisels, gouges, knives, hammers, anvils, needles, tools for net-making, fishing tackle, buttons, chains, spoons, spear-heads, arrow-points, and rings, bracelets and other ornaments in great variety. Strange to say, saws, though they seem to have abounded in the stone age, are rarely found among the vestiges of the age of bronze. The total finds of them in the Swiss lakes do not exceed half a dozen, of which two are in the collection of Dr. Goss. One was found at Moerigen, the other at Auvernier, and both appear to have been

A Difficult Task Accomplished.

A San Francisco exchange says that the Lick trustees, San Francisco, have just re-ceived very important advices from Paris in regard to the glass disk which is needed to complete the 36-inch equatorial for the Lick Observatory. The contract for two disks—one of flint and the other of crown glass—which are needed for the construction of an achromatic objective was let to the celebrated firm of Alvin Clark & Sons in 1861. There were only two firms in the world who were capable of making glass disks of such size—nearly 40 inches in diameter. The Clarks employed one of these, Messrs E. Feil & Co. of Paris, to cast the rough disks for them. The fliat disk was cast in an unexpectedly short time, but the making of the crown disk has proved to be making of the crown disk has proved to be a matter of great difficulty, and this alone will have delayed the making of the large objective, and thus the completion of the Lick Observatory, by several years. The Lick trustees will have all the observatory, excepting the large telescope and the dome to contain it, finished and ready for work during 1885. As soon as two perfect disks of crown and flint glass are on hand the focal crown and flint glass are on hand the focal length of the telescope can be calculated and the size of the great dome determined upon; and nothing can be done until this focal length is known. No less than 19 trials have been made by the Messrs. Feil to cast a perfect crown disk, and a delay of more than two years has been incurred through the difficulties and risks of the operation. It appears that the Messrs. Feil have at last cast two suitable disks. There is, then, reason to believe that the rough disks for the large telescope will soon be in the for the large telescope will soon be in the hands of the optician. The successful workhands of the optician. The successful working of these disks into the proper curve for a perfect object glass is a matter of the greatest difficulty, but the extraordinary skill which the Clarks have acquired in the making of the objectives for the National Observatory (26 inches), the observatory of the University of Virginia (6½ inches), the Princeton College Observatory (23 inches) the Imperial Russian Observatory at St. Petersburg (30 inches), leave no doubt that Petersburg (30 inches). leave no doubt that within two or three years after the receipt of a perfect disk the whole 36-inch objective (the largest possible) will be finished. While the objective is making, the dome and the mounting can be constructed, so that the whole delay is and has been due to the difficulties incident to the optician's work. The work on Mount Hamilton has progressed as far as possible under the present conditions, and it will not be long before California possesses the most perfect observatory in the world, placed in the most favorable situation which can be found.

Boring with Compressed Water.

so satisfactory that his proposition was adopted on the western side, while the piercing of the eastern gallery was to be done by the same means as had been employed on the St. Gothard, known as the Ferroux machine. After a few months' experience it was demonstrated that the Brandt was in perforating power the equal, if not the superior, of the Ferroux machines, while it possessed an undoubted superiority for the ventulation of the gallery, and consequently for the health and comfort of the workmen. When I saw the Brandt machine at work I was struck by the contrast between its smallness and the greatness of the task it had to accomplish. ance and size it resembles an old-fashioned 6-pound field piece. The drill has a diameter of 30 inches, and consists of a circular auger, which is held powerfully against the rock by means of a hydraulic pressure of from 100 to 120 atmospheres, while at the same time a rotary movement is imparted to it. The pressure against the face of the rock is the result of a column of compressed water contained in the cannon-like cylinder of the machine; inside of this cylinder is a fixed piston-rod, a detail in which the Brandt machine differs from all other similar drills, in which it is the cylinder that is fixed and the

Paris, 1878.



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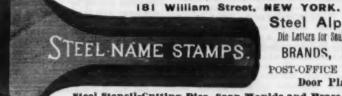
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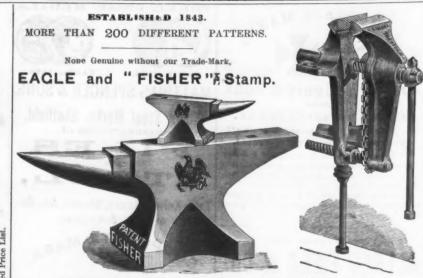


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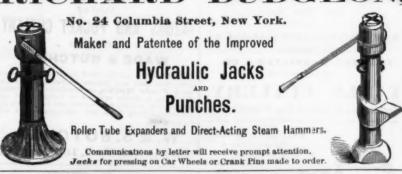
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rate of progress varied greatly, according to the nature of the rock traversed. Sometimes a stratum of exceptionally hard rock would be encountered, and sometimes the strata would be so friable that the roof and sides of the gallery had to be immediately protected with shoring. At the start the average daily progress did not exceed 6½ feet, but toward the end 26 feet were the neet, but toward the end 26 feet were the minimum, and 37 feet the maximum, of a day's work. As high as 100 cubic yards of rock were sometimes removed during 24 hours, and an average of 500 cubic yards of masonry were built per day. About 2,000,000 pounds of dynamite were used in this blast, and most of it was manufactured on the spot, in large frame buildings erected for the purpose in included spots at aither and of the purpose in isolated spots at either end of the tunnel. In the construction of the gallery the same system employed at the St. Gothard Tunnel was adopted. This system consists in the establishing of a principal gallery and of a second gallery parallel to and same time. The upper gallery, 7 feet high by 6½ feet wide, would only permit four men to work. Mexican Railways.

At a recent meeting of the Pittsburgh Enginers' Society, Mr. Emile Low, who spent several years in Mexico engaged in railroad engineering, read an interesting paper on the "Mexican Railway System."

He stated that at present the industries of Mexica are at a present the industries.

of Mexico are not very extensive. During the Spanish reign all manufacturing was forbidden, the main industries of the City of Mexico being nearly wholly confined to the making of gold and silver ware and the manufacture of tobacco. The most extensive trades now are the making of tallow manufacture of tobacco. The most extensive trades now are the making of tallow and wax candles, as well as leather, hats being also a specialty. The area of Mexico is 704,400 miles, or about one-fourth that of the United States, the population being 10,000,000, or less than one-fifth that of the United States. The country is fairly, if not densely, populated. Exports from Mexico are increasing in value from year to year, the increase last year being 10 per cent., and the increase is almost equally divided between general merchandise and the precious metals. The bulk of the general merchandise went to the United States.

A matter of interest which the speaker gave was a table showing the routes overland from New York to the City of Mexico. This table was as follows:

First Route.

Miles.

New York to St. Louis.

St. Louis to Longview to Palestine

10 Mexico, via Mexican National Railway.

883

Total.

Second Route.

New York to St. Louis.

1,065

St. Louis to Kansas City.

Kansas City to Torseke. merchandise went to the United States which also received a large portion of the specie. The great drawback on Mexican export has been the lack of transportation facilities, and this objection is rapidly disappearing, so that before long the great mineral resources of Mexica will be the roughly throw resources of Mexico will be thoroughly thrown open to the world.

The recent growth of the railway system of Mexico is one of the marvels of the era of the locomotive, for until but recently the only railroad in Mexico was that between the City of Mexico and Vera Cruz, known as the Mexico Reilway and being of the riles. the Mexican Railway and being 264 miles long. This road has branches to Pueblo and Jallapa, adding 100 miles to the length of the old system. The materials for this road were transported overland at an enormous expense. The great amount of money spent in the construction of this road prevented other roads from being constructed, hecause it was supposed that there were peculiar obstructions to railroad building to be encountered in that country. Since this question has been examined into, and the oninion stated found to be arroneous, there opinion stated found to be erroneous, there are 19 different railroads in the Republic, which run over 3423 miles of the country, nearly all of which have been built within the last five years. The most important of the roads is the Mexican Central Railway, the articles of association of which were signed in Boston, February 25, 1880, under the general railroad law of Massachusetts. taken by the Atchison, Topeka and Santa Fé, and the Chicago, Burlington and Quincy railroads, and by American and foreign bank-ers. Thomas Nickerson, of Boston, was elected president. The first surveys were commenced president. The first surveys were commenced in the City of Mexico, under Howard Schuyler, chief engineer (now deceased), about the last of June, 1880. Track-laying was commenced about December 15, 1880. The greatest difficulty encountered at first was with the "peons," or Mexican laborers, who were entirely unused to steady work and American punctuality. Ten thousand men were employed. On September 15, 1881, the road was open to San Antonio de Tula, 58 miles. After this construction went on more rapidly, and on the 8th of March, 1884, the rapidly, and on the 8th of March, 1884, the final spike was driven, opening the road from El Paso del Norte to the City of Mexico. The road runs from El Paso through the States of Chihuahua, Zacatecas, Aguascalientes, Guanajuato and Mexico, a distance of 1224 miles. The branches of the road from points in it to Guanajuato, Tampico, the Pa-cific coast and the Timber Tract swell the

The Government concession grants to the road a subsidy of \$15,200 per mile of the road constructed and approved by the Depart-ment of Public Works. The salaries of the engineers are fixed, as are also the rates for transportation of freight and passengers, the rate for the latter being fixed at not above $4\frac{8}{10}$ cents per mile for first-class, $3\frac{9}{10}$ per rate for the latter being fixed at his above $4\frac{8}{16}$ cents per mile for first-class, $3\frac{10}{10}$ per mile for second-class and $2\frac{4}{10}$ cents per mile for second-class and $2\frac{4}{10}$ cents per mile for third-class passage. The Government also obligates itself not to give any subsidy to any parallel line which may be established within a zone of 65 miles on each side. The Mexican National Railway is being built in accordance with a decree of the Mexican Congress, executed on September 30, 1880, the concession being granted to James S. Sullivan. The road, through its president

gines placed on either side. The drill will and American promoter, General Palmer, is make, according to the nature of the rock, known as the Palmer-Sullivan road. It is from 5 to 12 revolutions per minute, and it can be driven to a depth of 39 inches. From the City of Mexico to the Pacific When it is withdrawn a dynamite cartridge is inserted and the face of the gallery is blown down. By means of four of these machines a gallery 16,300 feet long, with a heading of 10 square yards, was driven into the western side of the Ariberg during the same space of time that six Ferroux machines agos. The subsidies allowed are smaller than those of the Marian to the western side of the Ariberg during the same space of time that six Ferroux machines than those of the Marian to the western side of the Ariberg during the same space of time that six Ferroux machines than those of the Marian to the Pacific Ocean at Manzanillo, from Mexico to the Pacific Ocean at Manzanillo, from Mexico to the Pacific Ocean at Manzanillo, from Mexico to the northern frontier to Lando or Eagle pass, through the cities of San Luis Potosi, Sattillo and Monterey. Also branches from Matamoras to Monterey, from Zancaticas to San Luis Potosi, and from Zancaticas to Lagos. The subsidies allowed are smaller than those of the Mexico to the Pacific Ocean at Manzanillo, from Mexico to the northern frontier to Lando or Eagle pass, through the cities of San Luis Potosi, Sattillo and Monterey. Also branches from Matamoras to Monterey and the cities of San Luis Potosi, Sattillo and Monterey. Also branches from Matamoras to Monterey and the cities of San Luis Potosi, Sattillo and Monterey. Also branches from Matamoras to Monterey. Also branches from Matamoras to Monterey. Matamoras to Monterey, from Zancaticas to San Luís Potosi, and from Zancaticas to Lagos. The subsidies allowed are smaller were driving a similar gallery 17,900 feet into the eastern side of the mountain. The daily than those of the Mexican Central, and the road is therefore allowed to charge for first class passage 6½ cents; for second class, 5¾ cents, and for third-class, 4 cents per mile. The total number of miles at present in operation is 696.

Besides the important roads mentioned,

Mr. Low described 16 roads of various lengths, which may be enumerated as follengths, which may be enumerated as follows, the miles given being those at present in operation: Senora Railway, 265 miles; Mexican International, 156 miles; Morelos Railway, 99 miles; International, 156 miles; Pueblo fand San Marcos Railway, 36 miles; Pueblo fand San Marcos Railway, 36 miles; Vera Cruz and Medelin Railway, 10 miles; Sinaloa and Durango Railway, 40 miles; Tehauntepec Railway, 31 miles; Esperanza and Tehuacan Railway, 31 miles; San Martin Tex. Melucan Railway, 23 miles; San Martin Tex. Melucan Railway, 23 miles; San Martin Tex. Melucan Railway, 23 miles; San Martin Tex. Melucan Railway, 31 miles; Fan Martin Tex. Melucan Railway, 31 miles; San Martin Tex. Melucan Railway, 31 miles; Fueblo and Matamoras Railway, 4 miles; Vera Cruz and Alvarado Railway, 34 miles; Hidalgo line, Irolo to Pachuca, 35 miles. The sum of all the miles at the present day in actual operation foots at the present day in actual operation foots up to the comparatively large number of 3423 miles.
"General Grant obtained a concession in

1881 for the proposed Mexican Meridianal and Oriental Railway," said Mr. Low, "which was to run from the City of Mexico through Pueblo, Quaxaca and Tehuantepec to the southern frontier or boundary line between Mexico and Guatemala. It also includes several branches. The head and front of the company which was organized was Jay Gould. There was some trouble in the company however, and Grant's grant Mexico. Jay Gould. There was some trouble in the company, however, and Grant's grand Mexican scheme proved a flasco before the work had begun. Other roads proposed, on which work has not yet begun, are the American, Mexican and Pacific, Central Table Land, Mazatlan and Jepic, and New York, Texas and Mexico railroads."

A matter of interest which the speaker

manual ma	
First Route.	Mile
New York to St. Louis	. 58
Laredo to Mexico, via Mexican Nationa	41
Railway	-
Total Second Route.	3,08
New York to St. Louis	24
Topeka to El Paso El Paso to Mexico, vía Mexican Central Rail- way	1,09
Total	*
Showing that when the Mariesa Nat	

Showing that, when the Mexican National Railway will be finished, the distance from New York to the City of Mexico will be shortened by 700 miles.

Postal Treaty with Mexico.—The special postal convention between this country and Mexico, the execution of which has been pending for some time past, was signed on the 21st inst. by Postmaster-General Hatton, on the part of the United States Post Office Department, and Mr. Romero, the Mexican Department, and Mr. Romero, the Mexican minister, on the part of the Interior Department of his Republic. The convention still requires ratification by the Mexican Senate, which is now in session, and approval by the President of the United States. It will, if ratified and approved, of which there is no doubt, go into effect on January I next doubt, go into effect on January 1 next. Under this convention the postal systems of the two Republics, as to their international the two Republics, as to their international postal relations, will be unified. United States domestic postage rates and conditions will apply to mail matter for Mexico, except samples of merchandise, ores, &c., packets of which, though liable to the domestic rates, are to be restricted to 12 ounces weight and the general railroad law of Massachusetts. The charter of the road was transferred to Robert R. Symon and associates by General Diaz, the President, April 3, 1880. The capital stock was fixed at \$5,400,000, which was taken by the Atchison Toneka and Santa currency. Post cards each 3 cents. Secondclass matter (same as that in the United
States), 4 cents per 480 grams. Third and
fourth class matter, including samples of
merchandise, &c., 2 cents per gram. The
sample conditions as to size and weight
of packets are the same as when sent
from the United States to Mexico. The
fee for registration in both countries
will be 10 cents. Third and fourth class
matter in Mexico comprises generally the
same matter thus classified in the United
States domestic mails, but includes commer-States domestic mails, but includes commer cial or business papers, which in the United States domestic mails are first class.

> The longest tunnel in the southern hemis phere has been recently completed. It will conduct the waters of the Nepean and Cor-deaux rivers to the Cataract River, at a point from which they will be led by a canal to Sydney to form the water supply. This tunnel, which is about 7 feet in hight by a little over 9 feet wide, extends from the Nepean to the Cataract River, a distance of 4½ miles. It is three years ago last July since the contractors began to drive the tunnel through the sandstone, and as soon as they commenced work they knew they must lose a large sum of money on the contract, which was for a little under £70,000, but the outlay has been many thousands of pounds

PAT.DEC. 26.187

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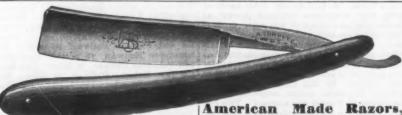
BECOND, I further undertake and agree to and with the said John Wilson, and his legal representatives, not to manufacture or sell, or easus to be manufactured or sold, at any time'in the future, Knives or other Outlery, bearing his trade-mark aforesaid or any imitation or simulation thereof. IN WITNESE WHEREOF, I have hereunto set my hand and seal at West Mansfield, aforesaid, this thirty-first day of May, 1888.

INNERS ...

WITNESS:—
E. M. REED."
(Attorney for Defendant.)

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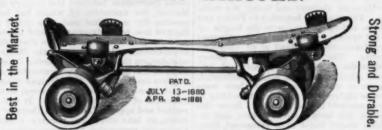
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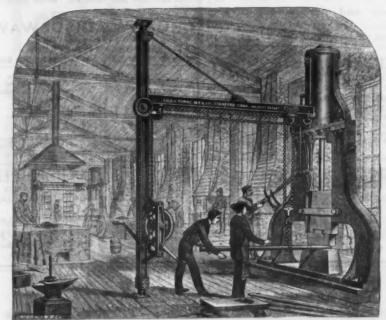
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On a New Method of Heating the Regenerative-Gas Furnace.

In every description of furnace which has hitherto been designed, either for heating or melting, it has always been considered that the first condition of successful working was to make the space to be heated as small as circumstances would allow, so that the flame might be brought into as intimate contact as possible with the inside lining of the furnace, and more especially with the material under treatment. This method of constructing and working furnaces, which was a necessary working furnaces, which was a necessary condition of success in all cases in which it was proposed to obtain a high temperature with the use of solid fuel, was also adopted in regenerative-gas furnaces, which until quite recently were heated on the same principle. The author, however, has for some time doubted the correctness of this view. time doubted the correctness of this view and from experience gained in the practical working of this class of furnace, after long and careful trials, has satisfied himself that they should be arranged so that the flame should only radiate heat upon the material to be heated or melted, and not come into actual contact with it, as has hitherto been the case. Further practice on the same lines has led to the development of the mode of heating to which he wishes to draw the attention of the Iron and Steel Institute on

the present occasion. The gas and air ports, instead of being so arranged that the flame shall impinge upon the materials placed on the bed of the furnace, as hitherto, open at some distance below the roof of the melting chamber, and at some distance also from its side walls, so that the gas and air after ignition have unobstructed space for entering into com-bustion; and for the free development of the flame, which is kept as much as possible from contact with the roof, walls or materials on the furnace bed, and when these are crucibles, ingots, blooms or packets of iron they should be placed sufficiently far apart to allow the radiant heat to have free access all around them. Where there are working doors, the flame should pass above working doors, the name should pass above their level; in this way the men will not be inconvenienced while watching operations inside the furnace; but, as already men-tioned, the main object to be secured is to avoid contact of the flame with the materials inder treatment, or with the walls of the furnace. In constructing furnaces according to this new method of heating, the air inlet may be arranged above the gas inlet, thus forming two parallel horizontal ports for the delivery of the gas and air in broad streams into the furnace chamber, the inflowing air overlapping the gas at each side; or the gas and air may be brought into the furnace chamber in several streams side by side, the air ports, which are more numerous than the gas ports, being also placed at a higher level than the latter; or, again, as shown in connection with a crucible-steel melting furnace, as the length of travel of the flame is compara-tively short, the gas is brought into the chamber by two ports, having an air port between them, and additional air ports on either side, the ignition commencing as soon as the air and gas, which are delivered in thin streams, reach the hight at which the flame is to travel across the furnace from end to end. This arrangement is one which could be applied in other cases, where, on account of the shortness of the melting chamber, the air and gas have to be well mixed on ignition to secure complete combustion before their exit at the other end of the furnace. In cases in which there is a great length of travel for the flame the ignition is retarded by means of a horizontal wall or tongue, so that it shall only take place at the entrance of the gas and air into the furnace chamber, and the combustion may be extended throughout the furnace, the flame in this case taking a semicircular or horseshoe course. The furnace as now built appears at first sight to be unnecessarily high and wide, but this new method of heating high-temperature furnaces by radia-tion requires a large space for the develop-ment of the flame, and for securing the ad-vantages which may be obtained by its use.

In order to realize the circumstances under which these benefits are obtained, it must be borne in mind that in the regendoes not depend so much upon the intensity as upon the quantity of heat required, whereas in the old furnaces, in which direct combustion of solid fuel takes place, intensity can only be obtained by means of a strong chimney draft or a blast, and the consump tion of very large quantities of the best fuel; and even with their use the highest temperatures required in the arts are difficult to get, and still more so to maintain, the difficulty and expense increasing with the size of the furnace. Thus it has been ascertained that in an ordinary crucible-steel melting furnace, heated by means of solid fuel, about 2 per cent. only of the heat developed is taken up by the steel, so that nearly the whole of the great mass of coke used is expended in getting up and maintain-ing the furnace at steel-melting temperature. In a regenerative-gas crucible-steel melting furnace, on the other hand, when once the steel-melting temperature has been reached, it is easily maintained with a moderate chimney draft, and therefore by the burncommey drait, and therefore by the curring of a comparatively small quantity of fuel, which may be of a poor quality, so that the greater part of the heat of combustion is taken up by the steel, while what remains amply suffices to maintain the crucibles and furnace at the necessary temperature, and only a very small quantity escapes through the chimney. The following is an actual comparison between an ordinary reheating furnace using solid fuel and one on the regenerative gas principle. The former uses about 3 tons of a fair quality of coal in a shift of 10 hours, while a regenerative furnace of conel capacity takes about 3 tons for the equal capacity takes about 2 tons for the same time, there being a saving of 33½ per cent. But if both furnaces are merely kept at a welding heat, without any cold iron being charged, then the solid-fuel furnace requires about 2½ tons of coal per 10 hours, while the regenerative-gas furnace takes ½ ton at the outside; so that, when it is only necessary to maintain a certain temperature,

* Paper read by Mr. Frederick Siemens at the Chester meeting of the British Iron and Steel Insti

the regenerative-gas furnace shows an the regenerative-gas furnace shows an economy of 80 per cent., while it is 33½ per cent. when both furnaces are bringing iron up to the welding heat. The results here given are from the author's personal observation, but in some cases the advantages gained by the use of the regenerative-gas furnace for heating purposes have been greater, reaching from 40 to 50 per cent. It is evident from the above considerations that in regenerative-gas furnaces a flame of very high temperature is obtained.

flame of very high temperature is obtained, such as is required for working by radiation, while the greater part of the heat so produced is taken up by the material charged, and that therefore there is no reason why the heating chambers of these fur-naces should not be enlarged to any reasonable extent, and at the same time be built so that the flame does not come into contact either with the sides and roof or with the material to be heated. Not only does the regenerative-gas furnace lend itself to this mode of construction and of application of of the flame, but experience proves that great economy in fuel is thus effected, to which must be added in many cases the indirect saving obtained by a considerably in-creased output and the improved quality of the material produced when it is not exposed to contact with the flame, while the furnaces themselves last much longer. There can be no doubt that the very remarkable results of improved quality and increased output of material, with a longer life of the furnace, can only be brought about when the active flame is not allowed to act upon the materials within the furnace, the interruption of the process of combustion by the in-terposition of solid bodies always tending to injure or even destroy them. But, besides the circumstance that solid bodies are in-jured by flame, it can be easily shown that when flame is brought into contact with any solid body it is more or less quenched, according to the substance, size and tempera-ture of the body.

A very simple experiment in proof of this, and one which is familiar to most people, is the following: Take any ordinary illuminating gas flame, such, for instance, as a batswing, and place a glass rod or tube into the middle of it; the flame will immediately burn dull and a large quantity of lampblack will be deposited on the vices of class. This will be deposited on the piece of glass. This action is most marked when the rod is cold, but takes place, though in a less degree, at any temperature, for the reason that the material to be heated is necessarily always at a lower temperature than the flame, also owing to the disturbance in the combustion caused by contact of the solid substance with the flame. The author hopes shortly to treat this subject more fully from a physical point of view; but the experiments he has made establish the following most important fact, namely, that a good flame, or, in other namely, that a good name, or, in other words, perfect combustion, can only take place in an open space, or in one of sufficiently large size to allow the gases to burn out of contact with solid material. To show more clearly the advantages which have been so far derived from the application of this new system it will be well to give a few examples of comparative results in working reples of comparative results in working re-generative-gas furnaces constructed on the old and new principle. A glass-pot furnace, built at Dreeden 10 years ago, and which has been reconstructed for experimental purposes, shows the economy of this method of heating most effectively. of this method of heating most effectively. This furnace held 10 pots, and melted glass every night, which was worked out during the day, giving a daily production of about 3000 bottles in a shift of seven hours, or, after allowing for pot breakages, a monthly production of 70,000 or 80,000 bottles. The pots lasted about three weeks, and the furnace itself about six months; during this time it required many repairs, which naturally interfered with its production. At present rally interfered with its production. At present the same furnace, supplied with the same quantity of fuel, and working the same charges, produces daily 5000 bottles in a shift of nine hours, amounting to a monthly production of 130,000 to 140,000 bottles. Fewer pot breakages also occur, less repairs are required, and the amount of waste has de-creased; moreover, the glass metal is obtained from a cheaper composition than hith-erto used, and proves to be of a far superior quality. The pots last fully double the time and melt more than three times the quantity of material, while the furnace itself stands for three years—that is, it lasts six times as long and melts more than nine times the quantity of material it did previously to its reconstruction. As the flame is kept away from the working holes, the glass-blower is able to work more at his ease and to turn out a better product, besides being able to heat his glass in the furnace without tarnish-

ing it.

There are also several other advantages of a minor character, which, with those al-ready referred to, enable the glass-blower to supply over 50 per cent. more goods without much greater exertion on his part. Another furnace, from which lamp-glass chimneys are made, gives still more favorable results are made, gives still more favorable results. The mixture employed is much more refractory than before, and the glass produced is of a better quality and of a whiter color, while the glass-maker is now able to produce this superior kind of glass in open pots— that is, in the same manner as common glass is made. The result is that the closed pots formerly used for melting the finer qualities of glass, in order not to expose the batch or mixture to the direct influence of the flame, are no longer required, whereby a consider-able saving in pote and fuel is realized. Sim-ilarly advantageous results are attained in in the open-hearth steel-melting furnace. At the Landore Siemens Steel Works, near Swansea, the furnaces which were altered at the end of last year and at the beginning of this to this new method of heating have already outlasted the furnaces reconstructed upon the old type at the same time, while they work more uniformly, giving an improved and larger output, owing to less oxidation of metal, as is proved by more ore being required per ton of pig iron used in order to decarbonize it to some extent.

The life of these furnaces is expected to be five or six times as long as that of the old furnaces, while great economy in the consumption of fuel per ton of steel melted should be realized.

melted should be realized.

This method of heating is now being adopted at several other steel-melting works

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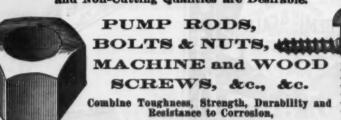
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in this country, and will be found particu larly advantageous where steel is intended to be made from inferior qualities of pig iron, by the adoption of a basic lining. Another important application of this method of heating is to forge, mill and puddling furnaces, as, owing to the absence of contact between the flame and the materials with which the furnace is charged, a great reduc-tion in the loss of metal which has hitherto occurred through oxidation will be effected. In steel reheating furnaces, contact of the flame with the ingots produces red-shortness in the metal, exhibiting itself in fissures, particularly at the corners of the ingots or blooms, when these are subjected to treat-ment either under the hammers or in the ment either under the hammers or in the rolls. The removal of the injured portions involves a stoppage of the operations, resulting in a waste not only of material, but of time also, and occasionally rendering the blooms entirely useless for the purposes intended. In the radiation furnace this cause of loss will no longer exist, while there will also be a saving due to non-oxidation of the metal. In iron reheating furnaces the gain in metal will be much more considerable. in metal will be much more considerable than in furnaces for the reheating of steel, owing to the higher temperature at which they are worked, and the metal will weld much more easily, as it is heated out of contact with flame. These furnaces should be made as long as convenient, in order to ob tain as much room for the development of the flame as possible, and for placing the ingots, blooms or packets sufficiently far apart to allow the radiant heat to reach them on all sides. In applying this new method of heating to puddling, it might be advantageous to erect a furnace containing a number of pans, which could either be placed in two rows, the men working at each face of the furnace, or the men could work all on one face by constructing the furnace of a horse-

For many other applications of the new system experiments have either been prepared or trials already made; for instance, for heating boilers by means of gas. When it is considered that the temperature of the system in a boiler working at 60 pounds present water in a boiler working at 60 pounds presswater in a boner working at co pounds pressure on the square irch is only 311° F., while the temperature of gaseous flame may be taken at 4000° F., it will readily be perceived what a quenching effect the metal of the boiler, which is, of course, at the temperature of the water has the flame. perature of the water, has upon the flame. In this case the principle has been followed of letting the active flame consume itself in the open space of the tube without allowing it to touch the sides until after complete combustion has been effected, when the products of combustion may be brought into direct contact with solid bodies. By such an arrangement complete and smokeless combustion is obtained, with the result of longer life to the boiler, the sides of which more readily deteriorate through direct contact with the flame than from any other cause. As the heat of the flame which is not transmitted by radiation comes after complete combustion into direct contact with the sides or flues of the boiler and its regenerators, it is completely utilized and a saving of fuel to the extent of 25 per cent. is secured by this method of heating. The results obtained in actual practice show that there can be no doubt that almost all heating apparatus used in the arts, in which direct contact of flame with the substances treated is not necessary for chemical reasons, will be materially improved by the application to by this method of heating, and it will, therefore, entirely abolish the smoke nuisance. Smoke is never formed when combustion is complete, being always caused by fame coming into contact with solid bodies, the process of combustion being thereby checked. This is, for instance, the reason why brick-kilns generally smoke so abomin-

flame coming into contact with solid bodies, the process of combustion being thereby checked. This is, for instance, the reason why brick-kilns generally smoke so abominably, for in them scarcely-developed flame is forced to impinge immediately on cold bricks, and can, therefore, only act in a very incomplete and uneconomical way.

The author has frequently made the observation, with regard to regenerative furnaces, that a short combustion chamber invariably gives very unsatisfactory results, and accounts for it by the fact that the flame is hardly formed before it has to pass through the outlet ports and into the checker-work of the regenerators, where its combustion is checked, and smoke is formed in consequence. To work well, a brick or pottery kiln should be so built that the flame faces of the shaft. the same way be much more enconomically material may be done away with, and that a worked on this new principle. From these shaft equal in strength to a round shaft is various descriptions of the regenerative-gas secured. various descriptions of the regenerative-gas furnace, as now applied, it will be readily understood that the heat of the flame is utilized in two distinct conditions and periods, the one following the other. The radiation period, with its active combustion of the highest possible intensity, is limited to the furnace chamber, which is made of ample dimensions, so as to allow the flame free space to develop without obstruction to its chemical action by intervening objects, while, after combustion is at an end and radiation ceases to be effective, the products while, after combustion is at an end and radiation ceases to be effective, the products of combustion, in passing through the loose brickwork of the regenerators, deposit their remaining heat by getting into close contact with the large surface of the bricks. This system of utilizing the heat of flame in two successive stages is the most economical as regards the consumption of fuel, and ought to be the ideal aimed at in all heating operations. In conclusion, I may add that, although the regenerative gas furnace has been well known and appreciated on account of its economy and efficiency for many years past, it will, when the principle of the exclusive use of the radiant heat of the flame to the heating chamber is applied in a thorough and efficient manner, give results which will far surpass any that have been obtained from it hitherto, and that its application in the arts will be multiplied to a degree which even its warmest admirers would scarcely have thought possible a short time ago.

New Inventions.

An attachment for rakes, harrows and similar toothed implements, patented by A. Holden, of Penhurst, Australia, has for its object the cleaning and scraping of the teeth as often as found necessary. The attachment consists of a narrow plate having tachment consists of a narrow plate having a number of holes corresponding to the rake teeth, so that the latter may be passed through the holes, and the plate is thus free to move up and down along the teeth. At both ends the plate is bent upward and then toward the handle to limit the extent of motion and prevent the plate from slipping off the teeth. An elastic rubber band holds the plate against the rake-head. In o der to clean the rake, it is only necessary to push to clean the rake, it is only necessary to push the plate downward toward the points of the teeth, when all matters adhering to them will be removed. On releasing the plate it will be carried back to its normal position by the elastic bands. A new process for working lead fume into

litharge and red lead has been described in the Journal of the British Society of Chemical Industry. The fumes evolved from the working of galena contain lead sulphate, sulphite and oxide, arsenic and antimory, also lead sulphide, and, when zinc ores are present, zinc oxide. The lead fume is mixed with sodium carbonate or hydroxide, and roasted. The roasted product is then washed, whereby sodium sulphate and sulphite, and sodium compounds containing areenic and antimony, are separated. The lead compounds are converted into lead oxide by this treatment. The lead fume may be boiled also with a solution of sodium carbonate or hydroxide, lead carbonate and hydroxide hydroxide, lead carbonate and hydroxide being formed, while arsenic and antimony are dissolved. The washed precipitate is then roasted. In the presence of zinc com-pounds they are removed by boiling with sul-phuric acid. If lead sulphide be present, it is necessary to boil first with a solution of calcium, hypochlorite. Sodium sulphate is calcium hypochlorite. Sodium sulphate is recovered from the liquors after separating arsenic and antimony.

A process for separating gold and silver from arsenide of iron, patented by E. Probert, of Eureka, Nev., is as follows: The arsenide of iron is first melted in a shaft, cupola or other furnace, and is then tapped out into iron pots lined with clay or other refractory substance. While the material is still in a fluid state and at the highest temperature, one-twelfth of its weight of granulated litharge or granulated lead is introduced. The litharge is reduced by the action of the deviditing agents contained in the arrande of attharge is reduced by the action of the de-oxidizing agents contained in the arsenide of iron, and the lead is precipitated, carrying down the silver and gold alloy with itself. The granulated lead, when used in place of litharge, acts in a similar way, though with less effect, alloying itself with the silver and gold during its passage downward through the bath of molten material. In order to remove the argentiforous or anyiferous lead remove the argentiferous or auriferous lead alloy from the pot, a small tap-hole is pro-vided in the bottom, or the whole contents may be allowed to cool and the lead alloy finally be separated after the solid block has been removed from the pot.

been removed from the pot.

A new process of making brass and other ornamented goods patented by H. & J. Grom, of Newark, N. J., is designed to reduce the cost of manufacture and to secure a better finish. A lead core piece having the contour of the article to be produced is cast in a mold and trimmed off in a lathe by a knife. Over the core thus prepared is some commaterially improved by the application to them of the principle of transmitting the heat of flame by radiation only, while the at of the completely burnt products of combustion is better utilized by contact. Complete combustion of the fuel is insured by this method of heating, and it will shapes which it would be impossible to make over a hard core. After the spinning pro-cess is completed the article is trimmed or otherwise finished for the market. The heat generated by the spinning process causes the sheet to expand, so that its subsequent con-

To work well, a brick or substantially at right angles to the flat sur-Located upon the shaft pottery kiln should be so built that the flame faces of the shaft. Located upon the shaft can burn itself out in a free space before being brought into contact with the bricks or pottery. Zinc-distilling furnaces, and, in fact, all furnaces in which muffles, tubes, crucibles and other vessels are used, will in the shaft in cross-section. It is claimed that by the use of the angular shaft much of the carrier way to be decreased with an extensive property.

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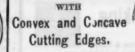
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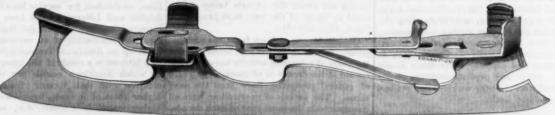
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oscillated to and fro by means of a rope, and down by the left hand, while the right hand operates the saws.

A riveting machine patented by J. F. Allen, of Brooklyn, N. Y., consists of a long upright V shaped frame, the arms of which are connected at the top and open at the bottom. On the free end of one arm the riveting device is attached. This device consists of a cylinder with piston or hammer and piston-rod, the latter being at its end made with a cavity corresponding to the desired shape of the finished rivet-head. The other arm carries a cylinder in which a heavy piston is made to work acting as an heavy piston is made to work acting as an anvil. The end of the rod of this piston forms the die for the rivet-head and holds the rivet and machine in place during the operation of the hammer. At the same time this rod presses the plates of the boiler shell together, as the end of the riveting device bears against the opposite side of the An attachment to spade handles, which

to spade handles, which is to facilitate the forcing of the blade into the ground and the lifting of the load has been patented by B. S. Boyles, of Winamac, Ind. The attachment consists of a piece Ind. The attachment consists of a piece of wire bent to form a prong at the top and bottom, and having its body formed into a horizontal loop. Upon this loop is placed a common tubular wooden sleeve or handle, which, however, must be put in place before the wire is bent. In order to attach the device, two of the rivets that pass through the spade handle and straps are first taken out, and the prongs are inserted in their place. The prongs are inserted in their place. The prongs are then clinched and made to serve the purpose of the removed rivets in holding the straps to the spade handle. The wooden sleeve is thus placed in the front of the spade, and a short distance above the blade, so as to be at convenient distance from the

A carpenter's vise of improved construc-tion has been invented by J. F. Miller, of Pittsburgh, Pa. Heretofore the main screw and its enlarged head were turned out of the same block, and, besides the loss of material occasioned, considerable time was wasted in reducing the screw. The inventor proposes to form the screw and head separately and to connect them by a pin and mortise. An annular metal plate is fastened against the outer end of the movable jaw, and through this plate and the jaws the screw is inserted, this plate and the jaws the screw is inserted, so that its head rests against the plate. A pin passing diametrically through the screw, directly back of the plate, permits it to be revolved while serving to retain it in position. A nut of the ordinary construction receives the end of the screw, and the usual lever is employed for turning it into or out of the nut. of the nut.

A device termed by its inventor an " anvil for lathes," and intended to support a piece of work from which a spindle is to be de-tached or affixed, is of the following descrip-A head made of cast iron and plated steel is composed of two arms or shanks meeting at a sharp angle. Into the head, near its corner, a circular depression is formed that is filled with soft metal. The head rests upon a ball which is of similar head rests upon a ball which is of similar shape in cross-section as the head. If a wheel or other article is to be detached from its arbor, the latter is placed into the crotch of the head, with the wheel resting upon its face. The arbor may now be driven out by a hammer. The block of soft metal is used for the purpose of allowing the arbor to be detached by striking it, end downward, upon the block. J. Birkenhead, of Mansfield, Mass., is the patentee of this anvil.

An improvement in water-tube boilers.

An improvement in water-tube boilers, which has for its object to adjust in place the plate plugs that close the hand-holes in the header, has been patented by M. Fleisher, of Philadelphia, Pa. Boilers of this charac-ter consist of groups of tubes, the ends of which are expanded into the steam circu-lating end chamber known as the "header." The hand-holes in the header must have a Ine hand-noise in the header must have a larger area on the inside than on the outside, and considerable difficulty has been experienced in introducing the closing plates into the holes. To overcome this difficulty the inventor makes the apertures that re-ceive the tubes larger in diameter than the closing plates. By this construction the plates may be introduced from the inside and are readily put in proper position. After the plates are introduced the enlarged

The inventors state that in practice a solution of soap in water will answer best. The claim of the patent covers the process of applying to the carrying rolls a paint-re-

pelling compound.

T. W. Foster, of Providence, R. I., is the base metal edge. The handle may be em-bossed or otherwise ornamented if desired. The inventor states that spoons and forks made according to his process are of great strength and durability.

C. W. Danpher, of Norwich, N. Y., has patented an improved construction of car-wheel and axle, by which lateral movement of the former is to be prevented. The car-wheel is constructed with an inwardly-elon
At the sale of the Government property at Harper's Ferry on the 22d inst. the Potomac water-power was sold for \$25,100, and the Shenandoah water-power for \$810.

gated hub, which forms an increased bearing in this manner the saws are reciprocated surface. Both the axle and wheel are, on and cut the wood. The wood is clamped to their contact surface, provided with annular the buck by means of a lever that is pressed recesses in line with each other. The body of the wheel is hollowed out directly around the hub, and the chamber thus formed communicates by two narrow passages with the side of the wheel and also with the annular recess. Melted metal is poured through the inlet passage into this chamber, from whence it flows into the hub and wheel recesses. this way the bearing surfaces are formed by the poured-in metal, which holds the wheel in place while allowing it to revolve freely on the axle. It is also said to prevent tilting or binding or any irregular movement of the wheel when the train passes over a curve. An ore sampling machine for taking from

large lots of ore small samples which will correctly represent the whole has been invented by D. W. Brunton, of Denver, Col. The ore is fed through a hopper upon the upper edge of an upright chute which may upper edge of an upright chute which may be oscillated to the right and left. Below the chute two spouts or receptacles are placed side by side. When the chute is oscillated to the right, the entire stream of ore is thrown into one spout, and when it is oscillated to the left, the entire stream is thrown into the other spout. The chute receives its motion by means of a driving bar and cam. At the outer end the driving bar is opposite the circumference of a wheel is opposite the circumference of a wheel which is connected to a suitable driving belt. The face of this wheel is perforated in two parallel rows, and into the perforations any number of pins may be inserted. These pins, striking the driving bar, operate the chute. It is evident that, as the number of pins in the two rows is varied, the time during which the chute throws the ore into either of the spouts is correspondingly varied. Thus the amount of ore thrown into either spout, at regular intervals, may be accur-

ately adjusted.

A metallic packing-box of new construc-A metalic packing-box or new construc-tion has been patented by G. F. Griffin, of London, England. The box is of cylindrical or other form, and its upper edge is first bent down a short distance, then up and then again down. In this way an annular groove is formed around the box, which is open on top and closed at the bottom. Into this groove the flange of the cover is inthis groove the flange of the cover is inserted. The inventor states the box is practically hermetically sealed by the spring action of the double bent edge. But, in order to provide an absolutely air-tight receptacle, a layer of paint, varnish or other material may be laid into the groove, so as to adhere to the can and cover and bind the same tightly together. As this material is placed entirely at the outside of the recepta-cle, it cannot possibly enter and injure the contents of the same.

contents of the same.

An ore grinder patented by A. B. Paige, of Chicago, Ill., is of the following description: Around the upright shaft are secured an upper stationary and a lower revolving grinding plate. The grinding surfaces of these plates are cast with a series of recesses or cells, which are of rectangular or hexagonal shape. Beneath the lower grinding plate there is placed a runner having a flange that projects upward parallel to the edges of the grinding plates, but at a distance from them, so as to leave an intermediate chamber. At the top the flange is bent downward, and enters an annular gutter. The ore is fed by means of a hopper to the grinding plates, and the ground ore to the grinding plates, and the ground ore passes into the chamber around the plates. passes into the chamber around the place. In this chamber, which is supplied with sufficient water to sluice the pulverized ore, the metal remains, while the lighter pulp. passes over the runner flange into the gutter. Here it is freely agitated, so that the finer particles of metal remain in the gutter, while the lighter material is carried off. Steam is supplied to the grinding plates to heat the ore as it is being ground, so as to facilitate the grinding action.

A Judicial Decision on "Futures." A Judicial Decision on Futures."

—A very important case was decided at Augusta, Ga., on the 22d inst., in the case of the National Bank of Augusta against Robert E. Cunningham, in the Superior Court, being a suit for payment of a note of \$3500 given by the defendant to Warren Wallace & Co., and discounted by the National Bank, based, it is alleged, upon futures in cotton, the note being given by Cunningham to a commission merchant to cover margins. The court charged that if the transaction was a specuopenings may be reduced to the proper size hands of all parties, whether innocent hold by a suitable bushing.

C. F. Wickwire and T. H. Wickwire, of Cortland, N. Y., have patented an improvement in the manufacture of painted-wire cloth. The cloth, after being painted, is passed over a series of rolls at the top and bottom of a drying chamber. The patented improvement has for its object to prevent the paint from adhering to the rolls and leaving the cloth imperfectly coated at some places. To this effect a trough is placed under each roll into which the same dips as it revolves. The trough is filled with any suitable liquid solution which will adhere to the rolls and at the same time repel paint. The inventors state that in practice a solution that is a suitable liquid solution which will adhere to the rolls and at the same time repel paint. The inventors state that in practice a solution which will adhere to take the rolls and at the same time repel paint. with gilded signs and flaming advertisements to allure unhappy victims to its embrace of death and destruction.

The Pennsylvania Store-Order Law. T. W. Foster, of Providence, R. I., is the patentee of an improvement in the manufacture of spoons and forks made of rolled-gold-plated front and back plates with an intervening filling of hard or soft solder. The front plate is made in hollowed form by striking its edge downward. The back plate is made in a less hollowed form and is cut out to fit within the turned-down edge of the front plate. The two plates are then flushed with solder and secured to each other by properly heating them, after which the outline edge of the upper plate is burnished to properly extend the gold coating over its base metal edge. The handle may be embered. Last spring about 60 employees of the Beth Exceptions were taken at once by counsel for the company, and the cases will be carried to the Supreme Court. The decision of the higher tribunal will be final in the remaining cases as well as those appealed.

Age Iron

Metallurgical Review.

New York, Thursday, October 30, 1884.

DAVID WILLIAMS JAMES C. BAYLES, JOHN S. KING, Publisher and Proprietos Editor. Business Manager

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Government Land Sales

Among the various indications of national prosperity, sales of lands by the United it apparent how our agricultural and railroad interests are intertwined and interdependent. Not only these, but many of our most important manufacturing interests spring up rapidly in the line of actual settlement, and keep close company with the pioneers in railroad extension. The facts have forcible illustration in the statistics of the commissioner of the General Land Office for the fiscal year ending June 30. Notwithstanding the universal depression which in all latitudes and climes has of late weighed down the spirit in looking over the list we also miss the names of enterprise, the westward "course of Empire" is accelerated rather than retarded. Although meanwhile immigration has been comparatively restricted, the sales of lands have gone on unremittingly, rolling up an aggregate for 1884 surpassing all precedent. Taking the totals for a series of years, the comparison is as follows

Year. 1879 1880	8,649,259 9,090,495	Year. 1882 1883 1884	16,880,455
		Total acres	78,709,810

From the foregoing it appears that during the last six years, including only such portions of the public domain as have been sold for cash or entered under the homestead and timber culture laws, over 73,500,000 acres of new lands have gone into the possession of producers, mainly for tillage, although it is known that grazing at the same time has developed on an enormous scale, and, according to an intelligent estimate, an acreage equal to one quarter of this amount has It is likewise conjectured that, immigration having fallen off largely within the twelvemonth, no small proportion of the more recent sales have been in consequence of migration from the older States-impoverished ands and depressed industries alike stimulating changes of locality conducive to individual prosperity, and no less directly affecting the national advancement.

Equally interesting as a subject of inquiry is the direction taken by the internal movement of population noted above. The "great Northwest" is, of course, the objective point, and an examination of the statistics shows that Dakota, as it was the year before, is the banner State. In that and the contiguous region the Northwestern system of railroads has had its chief development, naturally accompanying, if not preceding, the westward flow of population, and from thence deriving its largest revenues. The land sales of Dakota for 1884, although above 600,000 acres short of what they were in 1883, nevertheless make the magnificent total of 6,069,307 acres. Nebraska comes next, with 2,615,000 acres, while Kansas, Minnesota, California and Washington Territory follow in the order named, with sales approaching closely to 1,000,000 each. If we now take the leading States or Territories for a series of years, with the object of showing the position assumed by them respectively in the westward advance, the statistical array is as follows !

State or Ter- ritory.	1581.	1882.	1883.	1884.
Dakota Ter Minnesota Nebraska	Acres. 2,583,236 848,968 648,200	Acres. 4,855,088 1,085,786 884,028	Acres. 6,689,594 1,292,969 1,815,104	Acres. 6,069,307 937,876 2,615,101
Total Mileage in operation	4,020,404 6,859	6,894,800	9,297,667	9,622,984

The Pacific coast, comprising California Washington and Oregon, also advances with giant strides under the impulse of railroad progress and the united causes to which reference has been made. If individual fortunes have been sunk in the building of the Northern Pacific and the Oregon Railway and Navigation lines, it is none the less true that the stimulus imparted thereby to the material growth has an importance not easily exaggerated.

The Extent of Our Iron and Steel Industry.

The statistics of production of iron and steel furnish data for a comparison of the growth of the domestic iron trade from year to year. They also enable us to measure our metallurgical stature with that of other countries. But to know what the absolute extent of the iron and steel industry is it is necessary to have accurate information of the number and location of the various works, the leading features of their respective plants, the character of their products and their productive capacity. Such information relative to American iron and steel works is contained in a little volume just issued by the American Iron and Steel Association, entitled "The Iron and Steel Works of the United States." This is the seventh edition of this invaluable directory to the American iron and steel works. It will doubtless be found thoroughly reliable, as that is a characteristic of all the work emanating from the hands of the secretary of the association, Mr. James M. Swank.

In glancing over the contents of this extremely interesting publication we observe a number of new names among the works now in existence in this country, the two years which have elapsed since the last edition appeared having been a period of consider-States Government to actual settlers and able activity in the erection of new works in railroad corporations have a special signifi- several branches of the trade. Extensions cance. They not only show a marvelous ex- to old plants and a considerable increase in pansion of material resources, but also make capacity are also decidedly noticeable. We are surprised to see in connection with the name of one very large establishment the remarkable statement, "Decline to give information." The owner of an establishment has, of course, a perfect right to withhold information about his works from the general public, but it is a cause of regret paper is exceptionally well situated for se that any one connected with the American iron and steel trades should take such a stand when all his neighbors freely furnish corresponding information about their works. of a number of well known concerns which now have no active existence, but have been consigned to the lumber-room of "abandoned works." In this connection the preface of the new directory says:

Many of the furnaces retained in our list in 1882 and 1884, the capacity of which helps to form the aggregates for those years, have been out of blast for several years, and, being unfavorably situated and of antiquated construction, will probably never be put in blast. We do not positively know what their future will be, and hence do not feel authorized to place them in our abandoned list. This directory tells where furnaces are located, but it does not assume to point out those which can-not hereafter make pig iron at a profit, and hence have no more right to be counted as existing furnaces than if they had not been built. We use due diligence in ascertaining what furnaces have ac-tually been abandoned, but we cannot class as abandoned a furnace which the owner tells us he has not abandoned. It is, however, our deliberate judgment that the whole number of furnaces in this country to-day which are in blast or will ever be put in blast does not exceed 600, instead of the 675 of which this directory furnishes a descrip-

A conspicuous feature of the publication is meanwhile been sold in small parcels by railroad corporations from previous grants. a 'tabulated summary of the number and making a ton of steel rails in England at productive capacity of the various kinds of present is \$20.17.

iron and steel works enumerated, a comparison being made with like figures taken from the previous edition in order to show the changes that have taken place during the two intervening years. The principal points of the summary are as follows:

Sept. 1, July 25, 1884. 1882. Iron and Steel Works. Number of completed blast 675 furnaces. Number of blast furnaces building: 10 bituminous, 2 anthracite and 4 charcoal, on September 1, 1884; total. nnnal capacity of completed blast furnaces in pig iron, 9,300,000 8,000,000 2,750,000 7,600,000 7,000,000 steel, net tons

Number of rolling mills having
nail factories nail factories..... Number of nail machines.... Number of nail factories build-81 5,695 Number of nail factories building.
Number of nail machines to be used in the new factories Number of completed Bessemer steel works building.
Number of Bessemer steel works building.
Number of Bessemer converters: 46 completed and 3 building, on September 1, 1884 Annual capacity in ingots, net tons.
Number of completed openhearth steel works.
Number of open-hearth steel works building.
Number of open-hearth furnaces: 58 compl. ted and 5 building, on September 1, 1824 Annual capacity in ingots, net tons. 67 21 2,150,000 2,490,000 85 58 550,000 400,000 Number of completed crucible number of completed forges
making wrought from ore 8,594 115,000 105,000 ore
Annual capacity in blooms and
billets, net tons.
Number of completed bloomaries making blooms from
pig iron
Annual capacity in blooms, net 75,000 75,000 53 70,000 70,000

It will be observed that there was a decrease of ii blast furnaces in the period specified, but an increase of 1,300,000 net tons in capacity, showing that the old furnaces which have been abandoned were much smaller than the new ones which have recently been erected. The fact is recognized that it would be impossible for all the blast furnaces to be operated at one time, and the actual capacity is estimated in the preface at 25 per cent. below the nominal capacity above given, or 6,975,000 net tons. A number of interesting points are presented in this summary in connection with rolling mills and steel works, but only a few of them can be mentioned. The decrease in the number of rail mills is not surprising, but is probably very much larger than the table indicates, as many iron-rail mills now standing ready for work will never again turn out a rail. An actual increase in puddling furnaces flaunts itself in the face of our knowledge of the increasing substitution of steel for iron, but here also the chances are against the lighting up of many of them now standing idle. The growth of nail factories, Bessemer steel works and openhearth steel works as indicated accords with current information, but crucible-steel works also show an increase, notwithstanding the claim that the cheaper steels are superseding the product of the pot. Forges and bloomaries remain practically stationary, both as to number and capacity. For other details of the extent and present condition of our iron and steel industry we refer our readers to the volume itself.

The Cost of Making Steel Rails.

Press contains an interesting article on the cost of steel rails. We do not know how accurate its information may be, but presume the details have been obtained from some well-informed person, as a Pittsburgh curing reliable data on such a point. The actual cost of producing a ton of steel rails in Pittsburgh is placed at \$26.83, as shown by the following itemized statement: COST OF PIG METAL.

ľ	1 1-10 tons of coke, at \$2	
d	Limestone	
	Ore, scale, &c	10.0
U	Labor, including repairs	
١	General expenses	
1	Interest	.8.
	Cost of a ton of metal	\$15.10
	COST OF INGOTS,	
I	1 1-5 tons of metal direct, at \$15.18	\$18.15
1	Refractories	.20
ı	Lubricants	
1	Repairs	.24
Ī	General repairs	.17
1	Labor	1.18
ı	General expenses	.09
ı	Spiegel	2.81
ł	Interest	.20
l	Cost of a ton of ingots	\$22,48
ŀ	COST OF RAILS.	
ı	1.05 tons ingots direct with initial heat, at	
ı	\$22.48 per ton	800 00
ŀ	Labor and office expenses	1.90
	Repairs entire	.49
	Steam (natural gas)	.10
	General expenses	.35
	Interest	.22
	Tools, files, &c	.15
	Cost of a gross ton of steel rails	\$26.88
		-

The Fress also states that the cost of

Fluctuations in Trade.

The British and Colonial Manufacturer is mulating our own Benner in forecasting the future of prices. It reaches a slightly different result from our local prophet, how ever. While he tells us to expect a slight reaction in 1885 from the depression now prevailing, which is only to be succeeded by more severe depression, to continue until 1888, the Transatlantic student of price cycles comes to the conclusion that business is to be very much better than it has been for several years. Inasmuch as the commercial relations of the leading nations of the world are now so interwoven that it is 1,125,000 impossible for one country to be conspicuuously prosperous while the others are plunged in the depths of business stagnation, the prognostications of our British contemporary are of some interest to us, especially as its conclusions are drawn from the study of a series of elaborate tables, "prepared with great care and exactitude." The fu ture which Mr. Benner portrays for us is so lugubrious that we feel like extracting as much comfort as possible from the researches and deductions of other inquirers into the course of prices.

The Manufacturer finds that in Great Britain each decade for the last 70 years repeats itself with marvelous regularity in its periods of inflation and reaction, with intervening years of good trade and depression. The retrospect begins with 1816, which was a year of a commercial crisis and financial panic that was followed by three years of depression and general stagnation. In 1820 there were signs of a slow, but decided, recovery, which developed in 1821 into general activity and confidence. Three years of commercial prosperity followed, but in 1825 overtrading and speculation were indulged in, terminating in a breakdown, with a financial panic. The year 1826-just 10 years, it will be observed, from the previous time of general depression-was a period of commercial crisis, which was followed by three years of depression, stagnation and distress. In 1830, as in 1820, the signs of prosperity began to show themselves, and fiscal years 1871 to 1884 inclusive : the subsequent three years were fairly prosperous, developing into a period of overspeculation, which ended in the memorable breakdown of 1837. Only two years of depression followed on this occasion, the revival beginning in 1840.

From 1840 to 1844 there was general prosperity in trade and commerce, with the usual result of wild speculation, lasting two years, and terminating in a commercial crisis in 1847, followed by two years of general depression and distress. The year 1850 once more brought indications of returning trade, and 1851 was an extremely active year, followed by three years of general prosperity, leading up to overtrading and speculation in 1855 and 1856, terminating in disaster in 1857. The decade from 1860 to 1870 was a repetition of former decades in almost every respect. So also was the decade from 1870 to 1880, the British panic having been delayed several years after our financial revulsion of 1873. The years 1880 and 1881, says the Manufacturer, were years of slow recovery in Grea Britain. The past two years—and to some extent, with all its drawbacks, the present year-have been years of prosperity, the volume of trade having been large, though profits are small, the exports being nearly equal to those of the two most prosperou years, 1872 and 1873.

Commenting upon these facts, our content porary says that in the past seven decades the years of returning activity have been the second of the decade in all cases. The years of general prosperity have been the next three. The periods of overtrading have all commenced in the same year of each decade, A recent issue of the Pittsburgh Penny failures, and in all instances except three there were three years of depression and distress. The length of the cycle has been the same in all cases except two, one of those having been nine years and the other eleven, thus equalizing the decades. If the present decade is in any sense a repetition of restless speculation and endeavor to force The Manufacturer points out that trade." this would inevitably be followed by a period of depression and distress, and, therefore, gently deprecates it, but at the same time its prognostication is decidedly in favor of active trade in 1885.

We must not overlook the fact in this connection that, though periods of commercial stagnation are common all over the civilized world, they occur in some countries much later than in others, and the recovery from depression takes place at different times also. Sometimes Great Britain leads off in these fluctuations; sometimes the United States goes first, and occasionally some other country is in the van; but after a decided change once been made in either direction, it gradually becomes universal. If trade becomes very active in Great Britain next year, it will undoubtedly be very closely connected with commercial conditions on this side of the Atlantic, our relations being so intimate. We should consequently expect | in questions affecting our maritime position, a very much better business, with some approach to the feverishness of overtrading, instead of the very mild reaction which Ben ner prophesies. We shall see in a little time which country has produced the true plying between this city and Transatlantic prophet.

An English Railroad Scare.

The quotations for English railroad stocks eem to be as sensitive to adverse news as our own, notwithstanding the numerous criticisms made by our Transatlantic cousins on the instability of American prices. We draw this inference from the statement made in a recent London dispatch that certain English railroad stocks are falling in price on account of American competition in rails." This effect must have been produced by the publication in England of the Canadian steel-rail contract recently secured by the Lackawanna Iron and Coal Company. Capital is traditionally timid, but in this case it must be exceptionally "scary" if holders of the stock of railroads located in the English mineral districts think that English steel works will seriously suffer from American competition in their export strade. We hope that our manufacturers will be able in time to secure many orders for steel rails from other countries; but we are not so sanguine in this matter as to believe that we shall at once secure a huge slice of the ex port trade enjoyed by the English makers. The English railroads, which now receive a great deal of business from the steel works located on them, will not, we think, have to cut down their dividends for some time on account of the diversion of foreign rail orders to American mills.

It must be observed, however, that, viewed from another standpoint, English railroad stockholders have great feason to regret the development of the American steel-rail mantifacture and the great drop in domestic prices. The English steel works have lost a very large market in the United States through the establishment of enough works here to supply our own wants and the reduction in domestic prices to a point that absolutely prevents foreign rails from securing a foothold anywhere within our territory. The extent of the trade which has thus passed out of the hands of our Transatlantic competitors is very forcibly shown by the following table, which exhibits the quantities and values of the all-steel rails "imported and entered for consumption" in the United States for the

Fiscal years. 1871	Gross tons. 44.787	Value. 22,328,590	Fiscal years. 1878.	Gross tons	Value.
1872	105,214	6,120,148 9,001,797	1879	2,595 52,409	09,254 1,643,701
1874	180,387 48,688	9,724,719 8,188,156	1881	166,289 198,555	6,101,251 6,588,188
1876	5,954 1,677	400,779 193,944	1888 1884	7,884	2,835,615

In these 14 years the total quantity of foreign all-steel rails consumed in the United States was 963,200 gross tons, costing \$47,-857,854 at ports of shipment. The loss of such a trade is of immense importance, and is worthy of deepest regret. We can readily understand why English railroad stocks should have fallen when it was perceived that this trade was vanishing. Here was something tangible, capable of demonstration in plain figures. Possibly our British cousins imagine now that we intend to ecome aggressive in foreign markets to an extent proportionate to the vigor with which we fought for our home market, This would, indeed, be a consummation most gratifying to our American ambition, but it is rather beyond our present anticipations.

Our Shipping Interests.

In another column a correspondent bewails the fact that the vessels of the American Line, established for service between Philadelphia and Liverpool, have been sold to a foreign company. He alleges that this inglorious termination of an earnest effort to build up an American Transatlantic steams ship interest is a result of the unequal terms on which American vessels are obliged to compete with their foreign rivals, such as higher rates of interest, heavy local taxes, higher wages to seamen, &c., and urges though in three cases the period extended that the only way in which these inequalities over two years, instead of one. Then followed can be overcome is first by securing an a year of commercial crisis and financial abrogation of local taxes on ocean vessels, nd, second, by the payment of a subsidy large enough to equalize the difference in seamen's wages, &c. Curiously enough, our correspondent seems to have overlooked the fact that we are at present controlling quite a alice of the foreign car ying trade, with domestic taxation in full force, seamen's former decades, "we shall have a spin of wages regulated by circumstances entirely, and no subsidies enjoyed whatever. In the direction referred to, our vessels meet foreign vessels on an equal footing, and actually vanquish them. If not, why should we have the bulk of this particular part of the foreign carrying trade. In the year 1883 American vessels carried \$54,783,743 in value of our imports from the West Indies, against \$32,-525,348 carried in foreign vessels. The advantage is on our side both as respects steam and sail. This trade may be said to be small in comparison with Transatlantic trade, but the fact nevertheless remains, that, though foreign vessels are as free to compete for it as for Transatlantic business. we take the lion's share. If this is possible without any special favor being shown to American vessels engaged in this branch of our foreign carrying trade, what becomes of the lamentations we so frequently hear of our inability to compete with our rivals on the ocean in other directions?

Apropos of the interest now being taken it may be well to note what the old and wellestablished lines are doing at present. Owing to the low rates of freight obtained by ocean steamers in our European trade, the fleet ports is to be materially reduced the comin

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winter, now that the season for passenger travel has nearly closed. The Anchor Line will be taken off from the Liverpool service altogether, and several of the first-class passenger steamers will be laid up for repairs. The following shows the cost of running some of these vessels, in the single item of

Vessel. Oregon City of Rome Alaska Servia	cons per 337 304 253 214	44	Aver. knots per hour. 17 9-10 16 16 8-10 16 5-10	Cost of coal per voyage. \$18,872 17,024 15,168 11,956
Aurania		**	16 7-10	11,956
America	182	66	17 3-10 16 3-10	10,192 6,440
G 111			77 7 4	11 1 1

Sailing vessels are in a plight equally bad An old shipowner declared to us recently that, if anybody would present him with a new first-class ship on condition that he should run it, he "would not accept the gift." The truth is that ocean transportation business has for the present been overdone, the same as in all other branches. We have, therefore, no inducement just now to engage development is steadily going on, I have even to a limited extent in the Transatlantic trade with such a prospect.

The following table of the par and market values of shares in the leading ocean steam-

ship companies of Great Britain is	aken
from the London Economist of October	11:
£ paid in £ bid. £:	asked.
16. African Steamship 7	8
15. Amazon Steam Navigation 91/2	1016
14. Castle Mail Packets, Limited11	12
10. Cunard Steam Shipping, Limited 23/4	814
20. Cunard Steam Shipping, Limited. 101/2	111/2
10. Mercantile Steamship, Limited 8	9
5. Merchant Shipping, Limited 216	816
10. National Steamship, Limited 11/2	276
5. New Zealand Shipping, Limited 3	4
8. Orient Steam Navigation 334	974
50 Peninsular and Oriental Steam59	61
20. Peninsular and Oriental Steam,	001/
new, 1867	2079
9. Royal Exchange Shipping, Lim'td	50
60. Royal Mail Steam	1816
20. Union Steamship, Limited1214	512
10. Union Steamship, Limited, new. 414	1912
10 Union Steamship of New Zealand.1114	1078

With but two exceptions, it will be seen that all the above quotations are below par, and some of them as low as 10 per cent. of par. Nearly a year ago the Economist reported that "the larger number of steamers are being worked at a loss, while many "are laid up, awaiting better times." Since then the situation has gone from bad to worse, until most investments in British steamers are about as unremunerative as those in the poorest of our American railroads, which British writers just now are so loudly decrying.

The Decline in Tin.

Since we last noticed this metal editorially in September there has been an extraordi nary decline in value. From £81, 10/ for Straits in London at that time it receded to £72. 15/, but within the past week it went up to £76, with fluctuations in the market every day. Statistically, the position of tin in September was tolerably safe, as will be seen by the following table, the only cloud at that time being the threatened decrease of the Chinese demand in the Straits Settlements:

1	1884. Sept. 30 Tons.	1869. Sept. 30. Tons.	1884. Aug. 31. Tons.
Stock of Banca in Hol- land Stock of Billiton in Hol-		1,893	978
land	1,447	2,049	1,361
Stock of Straits and Australian in London	5,490	4,550	4,862
Total	8,860 780 1,850 1,400	7,922 720 500 1,650	7,216 1,100 1,700 1,600
Total Visible supply in the United States	11,890	10,792	11,616
Total visible supply	18,590	14,598	13,416
Price of Banca	fl. 49% fl. 48	fl. 573-6 fl. 563-6	fl. 51¼ fl. 49¼
Deliveries in Holland Deliveries in London	457 1,875	796 1,944	770 1,676
Total	1,632	1,970	2,446

would not have been of so much.

If, on both sides of the Atlantic, there had been the usual amount of speculation, for the speculators might have been able to keep up the price; but this year there has been little speculation in any kind of merchandise, and in tin seems to have been confined and in tin seems to have been confined this fly to one operator in London, who in for charcoal from the surrounding forests is thus very great, and allows of high prices being demanded on every possible occasion.

The standard measure of the coal when taken from the meiler is the "läst," containing 12 tunnor or 69,38 cubic feet. One "läst" is the ordinary measure of a cage mounted on a sleigh for horses. For transportation for longer distances than one day's portation for longer distances than one day's hour 1066. cline. All the chief tin-producing countries seem to consider present prices low, but high enough for profitable working, and most of them, except England, which produces a mere trifle nowadays, are turning out this rives at the iron works the freight charges year as much as they can, while consumption barely keeps up with the output. Should local coal. In the north the charcoal has tion barely keeps up with the output. Should the Chinese demand remain curtailed, as is not unlikely, the statistical position, from being a tolerably safe one, would soon become very bad, and the price would go on declining until either production received a well resists the transportation, although, on check, because unprofitable, or until the depressed prices induced solid capitalists in London and Holland to re-enter the lists as buyers. Capitalists, however, are fully aware to what a low level tin may decline before production is influenced thereby.

When Postmaster General Walter Q. Gresham was transferred to the Secretaryship of the Treasury, to succeed the late Judge Folger, rumors were current that he would not hold his new office long. These rumors were confirmed on Tuesday of this Char

week by the President's action in appointing Secretary Gresham to be Circuit Judge of the Seventh Circuit, to succeed Judge Thomas Drummond, resigned. The President has appointed ex-Secretary Hugh Mc-Culloch to be Secretary of the Treasury. Mr. McCulloch held the same position from March, 1865, until March, 1869. He is a man of much financial ability and experience, and possesses great physical and mental vigor, notwithstanding he is now 73 years old. His tariff views were inclined to tariff for revenue only " when he was previously in office.

The Present Condition of the Swedish-Iron Industry and Its Connection with American Trade."

(Continued.)

Information about Swedish iron-making has been given from time to time, but, as the a review of its principal features as observe during a recent visit to my country. I do not intend to give an historical sketch, because such has been already published, and, besides, it would make this article too long. Sweden, known in this country as the land Sweden, known in this country as the land of the midnight sun, is located between the 55° 30′ and 70° latitudes, extending about 860 English miles, and has a width at the middle of about 200 miles. Its area is about 160,000 English square miles, and the population about 4,400,000, making about 28 inhabitants per square mile. This may seem very little, but it must be remarked that more than half of the country is hardly inhabited at all thus making a much denser habited at all, thus making a much denser population in the lower part than is shown by the average figures above given. Look-ing at the map, it seems as though Sweden, with its long extent of coasts, should have the greatest facilities for shipping, but in reality these facilities are counteracted to a reality these facilities are counteracted to a great extent by a winter of about seven months, which close nearly all the harbors on the east coast. The cities from which exportation to America is mainly carried on are Stockholm and Gefle on the east and Gothemburg on the west coast. As the latter port is open nearly all the year, while the Baltic is frozen, the products have to be shipped by rail to Gothemburg in the winter. Most of the Swedish iron exported to America has been shipped by steamers from the aforesaid ports for reshipment in Hamburg, London or Hull to New York or Boston.

In consequence of the delay and expense

In consequence of the delay and expense of these reshipments, direct steamers have recently been started for carrying products without transfer. When the time is of less importance than a low freight cost, sailing vessels from different ports are chartered direct to America. The inland transportation from the iron works to the coast is made by the numerous lakes, rivers and canals, or by rail. Sweden has a railroad system of about 2970 English miles, single track, which is equal to about 6½ miles per 10,000 inhabitants. Most of the Swedish railroads are owned by the Government.

The charcoal, which, as is well known, is the only fuel for the blast furnaces and the the only fuel for the blast furnaces and the forge fires, is nearly all made from soft wood. It is only in the forests in the South of Sweden where the hardwood, such as beech and oak, are found, while walnut and maple are mostly cultivated in parks, and hickory is entirely absent. The hardwoods are generally used for carpenters' work, being too expensive for charged and are besides. expensive for charcoal, and are, besides, located too far from the iron-making centers. The charcoal supply for iron-making is nearly altogether dependent on the Norway pine and its associates and the birch, which trees grow all over the country up to the extreme north. The birch especially is noted for being found in places where hardly any other vectation is possible. It will any other vegetation is possible. It will thus be seen that Swedish iron-makers are much less favored by nature in regard to charcoal than the Americans, who can afford to put hardwood in their kilns. The Swed-

fore, necessary to transport part of the char-coal from the large untouched forests in the north down to the iron districts. The price in the north is about half of what it is in the center, but by the time the charcoal aralso to bear the competition from the saw mills, it being found profitable to saw the full-grown trees and export the lumber. The slabs and ribs at the sawmills are carbonized account of their shape, they are seldom used in blast furnaces for over two-thirds of the charge, the balance being forest coal. About the only method employed for making char-coal are the well-known meiler. The common American kilns are unknown, and the horizontal tunnel kilns that fire from the outside are only used at some few works. As the meilers are scattered in the most convenient localities in the forests, the transportation of wood is generally very small. In some places coal-wood is floated

*By N. Lilienberg, New York. Read at the St. Louis meeting of the American Association of Charcoal Ironworkers.

down the rivers from localities otherwise difficult to reach. A Swedish meiler for forest coal has generally a diameter at the middle of about 20 feet and a hight of about middle or about 20 feet and a hight of about 12 feet. The circumference measured at the middle hight is generally used for expressing the size. The meilers are sometimes laid horizonzal and of a rectangular shape, being smaller and variable in size, thereby utilizing shorter wood. The results with this style of meiler, of course, never can be so good as with the circular shape. A properly-managed circular meiler with light pine wood of medium size gives about 60 per cent. volume of charcoal compared with the wood raised in the meiler. A circular meiler has the undoubted advantage over a kiln of a movable cover of dirt which follows the shrinkage closely and gives indications of the slightest irregularities in the burning, but, on the other hand, there is more skilled labor and closer attention re-

The principal deposits of iron ore in Sweden extend from the Dannemora region depths sometimes as great as 840 feet. The cost of mining varies between 60 cents and \$3.50 per ton. The bulk of the ores are mag-\$3.50 per ton. The bulk of the ores are magnetic or so-called black ores, while the hematites do not exceed one-fifth of the total amount. In 1882 the quantity of ore mined within the said district was 873,356 gross tons, obtained from 459 mines. Going from east to west the principal mines producing quired, and the weather exercises a greater influence on a dirt cover than on a brick wall. But the principal reason for the general use of meilers is that they can be the average chemical composition:

ANALYSES OF SWEDISH IRON ORES FROM MINING DISTRICTS PRODUCING ANNUALLY More Than 4000 Gross Tons.

Mining district.	Province.	Gross tons in 1882.	Magnetite or Hematite.	Iron.	Phosphorus.	Sulphur.	Silica.	Lime. Magnesia, Alumina.
Nyāng	Gestrikland.	7,462		43.56		.148	24.30	
Penningrufva Dannemora	3	4,374	M. M.	51.07		.02	9.85	
Dannemora		* * * * * * *	M.	48.80		.171	9.30	
Dannemora	Upland.	33,192		58.20		.017	8.01	10.40
Dannemora	Panis	331-9-	M.	56.05			5.75	10.00
Skedika	j	4,438	M.	54.95				13.01
Kantorp	Sodermanland.	12,133	M.	56.50	.026	.022	14.76	4.63
Nartorp	Ostergotland.	4,958		43.55	110.	.008	28.40	15.50
Vintjern		18,353		46			19.93	15.74
Tuna Hästberg		20,084		50.02			4.84	4.72
Romme		11,212		55.67		.03	8.99	9.71
Ormberg		21,306 12,426		50.70		.027	16.30	3.91
Ivike		11,442		47.68	.030	trace	27.74	4.43
Björnberg		8,222		57.04	.044	.016	12.83	8.27
Finnäs		8,023		49.90	.031	trace	26.36	
Gräsberg	Dalarne.	13,967		45.66	.037	100.	22	10.58
Haksberg	1	4,162	H.	55.19	.016	.027	14	6.76
Nyberg		5,166		41.80	.017	10.	24.20	15.74
Svartberg		4,233		48.81	.OII	.36	6.79	7.80
Rispberg		13,899		65	.008		7.25	2.06
Rellingsberg		8,062		64.25	.003	.03	5.69	5.13
Langvik	100	4.939		42.06	.009		8.75	18.59
Rullshyttan		5,305	M.	44.76	.004		22.47	16.59
Svensbo	3	7,173	М. Н.	52	.08	.006	15.37	2.85
Risberg	1.1 077	44,359	H.	49.95	.021	.008	25.70	5.28
Klackberg	Westman-	32,370		42.50	100.	.08	.90	15.56
Norrberg	pe	15,212	M.	50.80	.01	.02	22	6.20
Kallmora	5 Westman-	18,719	M.	58.50	10.	.014	10.50	8.01
Kolningberg	Z land.	13,638	M.	44.17	.005	.03	9.20	9.80
Ragvald)	7,000		50.50	.03	.06	25.30	3.20
Stripas		6,480	M.	30.77	IO.	.03	27.64	21.28
Maria		4,289	M.	57.69	.021	.041	10.12	7.30
Stripa	,)	4,313	H.	40	.02	.02	27.40	12.80
Lomberg		11,860	H. M.	54.70	.08	.04	18.30	3.47
Ställberg		10,271	M.	48 49.10		.05	9.80	14.50
Kängrufvan		5,544		49.10	or aco	.09	4.90	12.29
ngelshyttan		6,539	M.	48.84	trace	.03	24.23	8.40
Stripa		25,000	H.	59	.005	trace	13.80	3.70
Högborn	Nerike.	5,748	H.	48.20	.018	.26	15.04	17.81
Klacka		9,446	M.	37.80	.003	.008	31.05	15.10
Striberg		43,873	M.	63 30	.025	.C47	4.60	4.45
Ringshyttan		8,213						
ogdhyttan	1 1 1 1 1 1	7,268	M.	54.74	.006	trace	25.10	.03
Pershyttan		10,850	M.	57.80	.018	.007	17.64	2.91
Oalkarlsberg	{	17,425	M.	61.20 55.20	.029	.027	7.85	6.20
innmoss		9,613	M.	60.70	110.	.045	8.53	9.70
aberg		5,452	M.	56.30	.013	.045	12	8.56
Enggrufvan	777 1 1	13,936						
ersberg	Wermland.		M.	55.79	.002	.031	12.76	10.80
ersberg		41,124	M.	57.89	.002	.025	11.35	9.20
ersderg			M.	59.80	100.	.016	9.50	7.30

Condensed from the complete tables prepared for the Exhibition in Paris, 1878.

enerally empoyed. An ordinary coal car olds about 1700 cubic feet, or about 1060 bushels. This seems very small to Americans, but it must be remembered that the Swedish railroads have no eight-wheeled Swedish railroads have no eight-wheeled cars, and that, therefore, the length is limited. The coal from the saw mill is frequently transported on the lakes during the summer, and then cages are used, thus facilitating the transfers and making the waste from crushed coal smaller. It will be seen from the above that the forest coal has to be stored before the arrival of the spring, and that sheds have to be constructed large enough to hold about one year's supply. These stockhouses are, of course, located close to the iron works, and so arranged that sleighs and cars unload from a landing under the roof. It is found that the hight of the coal stock should not exceed about 20 is especially true in Sweden, where limestone and charcoal are comparatively more expen-

I end this brief sketch of Swedish charcoal by mentioning that efforts are being made to introduce Mr. Mathieu's retorts in

making an average daily production of 934 tons. Taking the yield of the ore as averaging 50 per cent., the amount of ore required for the pig metal was 782,104 tons. The difference between this and the abovementioned quantity of mixed ore, or 91,252 tons, shows about the amount of ore exported. The greatest average daily production of pig iron was 14 tons, and the smallest 3¾ tons. iron makers on the subject of roasting iron ores, when I tried to draw attention to the importance of eliminating the sulphur, the chief cause of red-shortness in wrought iron and soft steel. I also mentioned that it is cheaper to take away the sulphur from the ore before charging than to depend entirely on the limestone in the blast furnace. This is especially true in Sweden, where limestone

Thinking that the arrangement of a Swedish Sweden, which may ultimately succeed. If the largest diameter downward. The gas the yield can thereby be increased from 60 inlets are located near the lower end, to 80 per cent. by volume, and if this holds and at a short distance above the true with light wood, as I believe it has proved a success with hardwood in this An ordinary six-door kiln is about 20 scenes.

country, this alone ought to give sufficient feet in lower outside diameter, and is inducement, even if the chemical works should not be generally erected.

feet in lower outside diameter, and is 30 feet in hight, with a 30 foot chimney stack on the top. The inventor has recently 30 feet in hight, with a 30 foot chimney stack on the top. The inventor has recently changed the cast-iron columns, and casing The principal deposits of iron ore in Sweden extend from the Dannemora region some distance north of Stockholm across the country ending near the west coast, thus covering a length of about 180 English miles. All iron ores mined within this territory are hard. There are none like the so-called soft hematites of Northern Michigan or the soft Cornwall ores of Pennsylvania. Most of the ores have therefore to be mined by blasting and hoisted from depths sometimes as great as \$40 feet. The cost of mining varies between 60 cents and the circumstances are materially altered when steam is used, because firing with solid fuel has then to be kept up either under the fuel has then to be kept up either under the boilers or in a special producer for the roast-ing kiln. It has been claimed sometimes that a blast furnace gives off enough waste gases for blast oven, machinery and roastingkiln, and this will undoubtedly be the case if a certain amount of the overburden is taken off, but the economy of such a proceeding is at least doubtful. I said that the small pro-duction of Swedish blast furnaces was due to slow driving, but it is, of course, also a result of the small size of the furnace.

The best working Swedish blast furnaces have 8 to 9 feet bosh. The ironmasters do not increase the diameter more than can be combined with a perfectly regular sinking of the materials, and submit to a restricted or the materials, and submit to a restricted production rather than to any possibility of disorder. An 11-foot bosh would there be considered fatal to an even distribution of materials so different in weight as charcoal and ore, especially if the charging be made by bell and hopper. With 9-foot bosh is combined a bottom of about 4½ feet. As the area of the bosh determines the amount of pig iron, and the hearth has only to hold the product, a widening of the bottom alone is not found to greatly increase the output. A combination of, for instance, a 9-foot bosh, with a 6½-foot bottom, which I have seen in some foreign countries, creates either cold pig metal, or, if sufficient number of tuyeres pig metal, or, if sufficient number of tuyeres are used, causes a too rapid and irregular descent of materials. With the diameters given are combined a hight of about 52 feet and a top of about 6 feet. As no bells and hoppers are used, a full benefit is derived from the hight. There is as yet no apparatus for closing the top in successful use, although a number of arrangements have been proposed. In taking the gas have been proposed. In taking the gas from the open top the quantity is considerably increased by not only having a sufficient space behind the iron cylinder hanging from the top, but also by dividing up this cylinder into compartments in such a way as to take the gas also from the center. So much gas can thereby be obtained that the remaining central will be useful to the property and the second to the content of the cont can thereby be obtained that the remaining part will be unable to burn on the open top during full blast. The careful charging of the fine and evenly-crushed ore and limestone is probably so well known that I need not dwell upon this subject. The latest blast furnaces are of modern construction, free hearth and columns, but plate casing is only used in some few places the majority.

free hearth and columns, but plate casing is only used in some few places, the majority being provided with hoops of flat iron.

The lining is made of Swedish and English fire-bricks, and the lower cone is lined by a stamped mass about 8 inches thick of quarz and fire-clay, in proportion of 10 to 1 in the lower and 8 to 1 in the upper part, thus forming one solid, smooth surface without joints. When carefully made, such a lining will last many years. The tuyeres are about 2 inches in diameter, the pressure being about 1½ pounds per square inch. Casting

about 1½ pounds per square inch. Casting is generally made every six hours on iron bottoms, as mentioned above.

The blast ovens are still much of the old type, with horizontal circular pipes, though standing pipes are used at some furnaces. The best of these have an oval section, thus giving the threefold advantage of greater. giving the threefold advantage of greater heating surface, greater strength and smaller surface for accumulation of dust. It may be questioned whether the regenerative system with the blast in direct contact with the bricks might not be arranged conveniently for even the small Swedish blast furnaces. for even the small Swedish blast furnaces. Some recently-constructed blast ovens contain a screw-shaped pipe, the gas being admitted in the center of the coil. The flame descends on all sides of the pipe and is drawn out below. The outer shell is divided in two, the separate parts being movable on wheels, so as to leave the pipes clear for cleaning. As the blast ovens must be placed at a certain hight, in order to receive sufficient gas from the open blast-furnace top, the space is to put hardwood in their kilns. The Swedish charcoal consequently does not weigh over 13 pounds per bushel, and 22 pounds, as frequently met with in America, is something unheard of there. It must, however, the charcoal is seldom weighed, everything connected with the wood, is transported. This transweighed, everything connected with the iron-making being carried on by measure.

The uniformity of the charcoals makes also located in places where there are no regular to put hardwood in their kilns. The Swedian possible the put hardwood in their kilns. The Swedish of the put hardwood in their kilns. The Swedish of the put hardwood is descends on all sides of the pipe and is drawn doubt one-sixth of them are built along the east coast north of Stockholm, but these profit by the cheap northern charcoal and hot the wood, is transported. This transportation is done almost exclusively during the winter, as the forest meilers are mostly located in places where there are no regular the ore districts and at the water-falls. Only about one-sixth of them are built along the east coast north of Stockholm, but these profit by the cheap northern charcoal and he facility for shipping the products, which favorable circumstances of fuel and carriage repay the transportation of the ore. In located in places where there are no regular repay the transportation of poil in the outer shell is divided in two, the separate parts being movable on wheels. So as to leave the pipes clear for cleaning facility for shipping the products, which facil the greatest possible heating surface within the smallest space. A charcoal blast furnace of about 10 tons capacity ought to have at least 1000 square feet of heating surface in the oven if a temperature of 900° be obtained without burning the burning Many of the Swedish blast ovens have, how ever, a much smaller heating surface, partly because of a limited space, but also purposely These outputs seem very small for American charcoal-iron makers, but Swedish iron-masters seldom compete for a large production, and consider a uniform quality the most economical in the long run. When only one particular grade of pig metal can be disposed of there seems indeed little inducement to if heart data all. As it is a fact that a low particular grade of pig metal can be disposed naces it is generally not more than 200 F., of, there seems indeed little inducement to if heated at all. As it is a fact that a low a large production of which one part has to be stocked. With exception of the hema-quality of the subsequently-made wrought the lake ores, all ores are roasted before melting. The well-known Westman roasts sometimes held that, basides the laws of the lake ores, all ores are roasted before high grades of Dannemora steel irons, it is ing kilns, especially adapted for the laws of th ing kilns, especially adapted for desulphurizing Swedish ores, have put Sweden to the front in this respect. I had the pleasure, two years ago, of addressing the charcoalerally of the old three-cylinder vertical type, erally of the old three-cylinder vertical type, having 3 to 3½ foot cylinder diameter, with about 3-foot streke, and making 15 to 20 revolutions per minute. These kind of en-gines last a long time when properly attended to; they also require very little attendance and give an even pressure.

(To be continued.)

The official statement of the result of the St. Louis Exposition, which closed a little over a week ago, gives the total receipts for the 40 days' display at \$92,000. The attendant Thinking that the arrange the forgotten, I the 40 days uspins a constaing kiln may have been forgotten, I the 40 days uspins a constaint the transfer of a conical shaft, with ance was 403,000. The Louisville Southern repeat that it consists of a conical shaft, with ance was 403,000. The Louisville Southern Exposition closed Saturday with appropriate Exposition closed Saturday with appropriate the same and the same and

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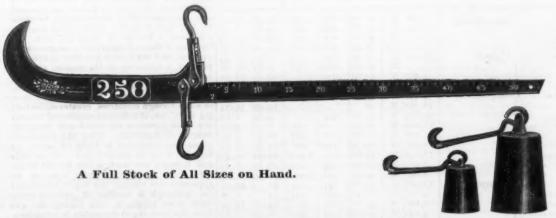
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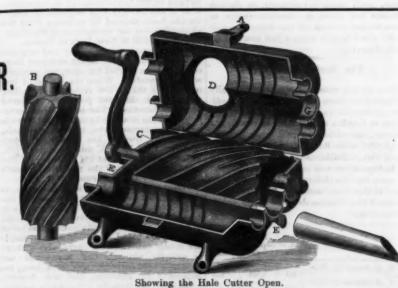
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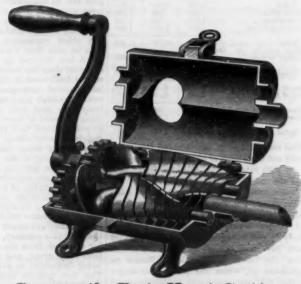






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Iron Age Directory Index to Advertisements. Air Compressors.

Clayton Steam Pump Works, Brooklyn. 46
Norwalk Iron Works, S. Norwalk.......46 Air Brakes. Westinghouse Air Brake Co., Pittsburgh. Alarm Money Drawers, Tucker & Dorsey Mfg. Co., Indianapolis. . 36 Chucks. Anti-Friction Metals.
Du Plaine E. A. C., Chicago, Ill..
Reeves Paul S., Philadelphia.... Clothes Dryers. N Y.... Fisher & Norris, Trenton, N. J... Hill Dryer Co., Wore Arms and Ammunition. Hutchinson J. W., 81 Chambers, N. Y. Shoverling, Daly & Gales, 84 and 86 Cha-bers, N. Y. Stevens J. & Co., Chicopee Falls, Mass. Coal. Artesian Well Supplies. Loveloy John F., 102 Chambers, N. Y....39 Asbestos Paints. H. W. Johns Mfg. Co., 87 Maiden Lane, N. Y. 36 Auger Handles.
Millers Falls Co., 74 Chambers, N. Y.....48 Augers and Bits. Jennings C. E. & Co., 96 Chambers, N. Y.. 29 Bates, Wilson & Co., 294 Broadway, N. Y. 14 Colters. Copper. Axes. Mann W. Jr. & Co., Lewistown, Pa... Peck A. G. & Co., Cohoes, N. Y...... Copying Presses. Bankers. P. W. Gaullaudet & Co., 2 Wall, N. Y.... Cordage. Barb Wire and Fence. Corner Irons. ton. Iowa Barb Wire Co., 98 Reads, N. Y. Thorn Wire Hedge Co., Chicago, III... Washburn & Moen Mfg. Co., Worceste Bellows, Manufacturers of. Scott Geo. M., Chicago, Ill Corrugated Iron. Bells.
The Miller Co., Canton, O...... Bells (Sleigh). Bevin Bros. Mfg. Co., Easthampton... Chapman Mfg. Co., Meriden, Conn... Belting, Makers of.
Alexander Bros., 412 N. 3d, Philadelphia.30
Main Belting Co., Philadelphia, Pa......26
N. Y. Belting & Packing Co., 13 & 15 Park Belt Oil. Post E. L. & Co., 10 Peck Stip, N. Y. Bicycles.
Pope Mfg. Co., 597 Washinton, Bo Bird Cages, Makers of, Lindeman O. & Co., 254 Pearl, N. Y. Maxwell John, 247 and 249 Pearl, N. Bit Braces.

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Bugnati & Loud, Boston, Mass...
Cleveland Block Co., Cleveland, O.,
Detroit Block Works, Detroit, Mich.
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Co., Chenell Robe, Co., Chester, Fa.
Castings, Steel, Co., Chester, Fa.

Castings, Steel. Chester Steel Castings Co., 407 Library,

Chester Steel Chastings vo. 48
Phitadelphia ... 48
Eureka Cast Steel Co., Chester, Pa. 48
Flagg Stanley G. & Co., Philadelphia ... 48
Johnson I. G. & Co., Spuyton Duyvil, N. Y. 48
Mackintosh, Hemphili & Co., Pittsburgh. 67
Pittsburgh Steel Casting Co., Pittsburgh. 68
Standard Steel Casting Co., Thurlow, Pa. 6

Reading, Pa.
Farges, Pertable, &c.
Bradley & Co. Syracuse, N. Y.
Buffalo Forge Co., Buffalo, N. Y.
Coble Frank H., Lancaster, Pa.
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Tatum Saml. C. & Co., Cincinnati, O.
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Wilson E. H. & Co., Philadelphia, Pa...
Whitney A. R. & Co. 58 Hudson N. Y. Iron Founders. Bannan, Fras. B. Pottsville Pa lron Ore. Stokes & Parrish, Philadelphis, Pa......46 Furnace Lamps Taylor & Boggis F'dry Co., Cleveland, O..37 J. W. Pullman, Philadelphia, Pa J. w. Puliman, Philadelphia, Pa. 5
Iron Pig, Importers of
Abbott Jore & Co. (Swedish), New York
& Boston. 41
Brier Hill Iron & Coal Co., Youngstown, 0.40
Hubbard Chas., 46 Cliff, N. Y. 4
Page, Newell & Co., Boston, Mass. 41
Williamson James & Co., 60 Wall, N. Y. 41 Iron Planers. Brettel Geo. E., Rochester, N. V Iron Sheet, Manufacturers of. Everson, Brown & Co., Pittsburgh, Pa. Jersey City Galvanizing Co., Jersey Ci Lefferts, Marshall & Co., 90 Beekman, N Merry John, 535 to 547 W. 15th, N. Y... Wood W. D. & Co., Limited, Pittsburgh Iron, Steel and Nails. Wheeler & Co., 14 CHff, N Key Blanks. Eagle Lock Co., 98 Chamber Nock G. W., Philadelphia, I Key-Way Cutters.
Morton Mfg. Co., Romeo, Mic
Lamp Stoves. Dangler Vapor Stove and Refining Co. Lantern Lighters. Lanterns, Tubular. Follet Lantern & Mfg.Co., Rochester, N.Y.31 Lathes. Lathes. Harrington, E. & Son, Philadelphia.... Ohl Geo. A. & Co., East Newark, N. J... Lawn Mowers.
Chadborne & Coldwell Mfg. Co., Newburg, N. Y. Field Alfred & Co., 93 Chambers, N. Y... 16 Graham J. H. & Co., 113 Chambers, N. Y... 8 Haines, Samuel A. 88 Chambers, N. Y... 8 Northwestern Hardware Co., Chicago. Ill. 41 Lemon Squeezers. Ripley Mfg. Co., Unionville, Conn Ripley Mfg. Co., Unionville, Conn.
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Durrie & McCarty, 97 Chambers, N. Y.
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The property of the Lancaster Bolt Company will be sold at public sale at the Grape Hotel, in the city of Lancaster, Pa., on Tuesday evening, Nov. 25, 1844, at 7 p. m., with its Bildings, Machinery, Tools, &c. used in the manufacture of Carriage and Tire Bolts, Auc Clips, &c. These works are in good order, located on Harrisburg Avenue, convenient to railroad depots, and will be sold on easy terms. For further information, address B. F. IRVING, Assignee, Lancaster, Pa.

FOR SALE.

Stock of Hardware. Iron and Steel in a large manufacturing city. Mass.; trade long established; stock will invoice about \$10,000.

Address "ARDWARE 120."
Office of The Iron Age, 83 Reade St., New York.

THE CLEVELAND

Storage Company

Are prepared to receive PIG, BAR AND NHEET IRON, LUMBER AND ORE, Blooms, Ingots, Muck-Bar, Car Wheels, Rails, Ma Pig Iron at Furnaces, Lumber at Mills or in Yards, Ore on Docks or at Mines. Warrants will be issued on all stock received, made trans-ferable by indorsement and deliverable to the holder on demand. These warrants will furnish a convenient medium of transfer and delivery, and serve as collateral to parties wishing advances on their stock. Correspondence solicited.

W. R. DRAKE, Sec. Room 35, Merchants' Bank Building. Cleveland, Ohio

For Rent

AT BRIDGEPORT CONN.,

A brick factory, 55 x 162 feet, with a high base ment and two stories; with 40-horse steam power, Address P. O. BOX 5, Bridgeport, Conn

Notice

TO THE TRADE.

Being desirous of retiring from business, will offer my entire line of Shelf Hardware, Tinware, Cutiery and Nails at greatly reduced prices. A. W. WHEELER,

141 Lake Street, Chicago, Ill.

Wanted.

By a married man with a large acquaintance with the trade of Minnesota, Dakota, Montana, and part of Wisconsin, also Province of Manitoba, a position to represent Manifacturers of Hardware either on commission or salary, with headquarters at St. Paul or Minneapolis. Experience of more than twenty (20) years in the trade.

Address,

Lock Box 57, Alexandria, Minn. Lock Box 57, Alexandria, Minn. Satisfactory references if desired.

WANTED.—By a practical Furnaceman, competent to make analyses and take entire charge of construction or running a blast furnace, a situation as superintendent. Would prefer going South. Address "PYRITE." Office of The Iron Age, 83 Reade St., New York.

Special Notices.

New & Second-Hand Machinery.

| Regine Lathe, 10 in. x 3/4 ft. | 1 cach. Engine Lathe, 14 in. x 4 and 5 ft. | 1 cach. Engine Lathe, 14 in. x 5, 6 and 8 ft. | 1 cach. Engine Lathe, 18 in. x 6 and 0 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 8 and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 8 and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 8 and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 8 and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 12 in. and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 7, 12 in. and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6, 10 in. x 7, 12 and 10 ft. | 1 cach. Engine Lathe, 18 in. x 6 ft. | 1 cach. Engine Lathe, 18 in. x 6 ft. | 1 cach. Engine Lathe, 18 in. x 6 ft. | 1 cach. Engine Lathe, 18 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 19 in. x 6 ft. | 1 cach. Engine Lathe, 10 in. x 6 ft. | 1 cach. Engine Lathe, 10 in. x 6 ft. | 1 cach.

SECOND-HAND. ECOND-HAND.

Regine Lathe, 15 in. x 6 ft. Wood & Light.

I Engine Lathe, 24 in. x 3 ft. Chelsea Machine Co.

I Haner, 24 in. x 24 in. x 5 ft.

20 in. x 5 ft.

All kinds Machinists' Tools and Supplies.
HEW YORK AGENCY OF
THE TANITE CO., GRANT & BOGERT MACHINE TOOL WORKS, and for the NEW POLISHED SHAPTING. H. PRENTISS & CO., 42 Dey St., N.Y.

Engines and Boilers.

NEW AND SECOND-HAND.

The following new Slide-Valve Engines guaran teed complete and first class: One 18 x 30. One 18 x 24.
One 14 x 14. One 14 x 20.
One 14 x 15. One 16 x 24.
One 12 x 14. One 11 x 14.
One 12 x 16. One 18 x 16.
One 14 x 18. 2d-hand. One 2 x 24, 3d-hand.
One Corliss Condensing Beam Engine. 32 x 73. ad-h.
One 8 H. P. Horizontal Tubular Boller.

Large stock assorted sizes new and latest improved Engines and Boilers. Come and examine our stock. Plans, estimates and specifications furnished for mills and factories, guaranteeing best results; steam engine indication; carde demonstrated for economy, &c. Send for circular.

NEWELL UNIVERSAL MILL CO., to Barclay Street, New York.

For Rent.

The old-established works of the Easton Lock Co., situated at Easton, Pa. (about 75 miles from New York), consisting of all the Buildings, Machinery, Engine, Lock Patterns, Dies, &c. These works have been in successful operation up to the 1st of June of this year. This is an opportunity seldom offered. The buildings are large and commodious, and the Foundry is one of the most complete and largest in the State. Owing to the death of one of the partners of the Easton Lock Manufacturing Co., is the cause of the works shutting down. Here is a business already established and ready to commence operations at once, as all the machinery is in good working order. For particulars and terms, inquire of HESS BROS.,

Easton, Pa.

For Sale.

The extensive plant of the "ST. LOUIS HOT-PRESSED NUT AND BOLT MANUFACTURING COMPANY." located in St. Louis, Mo.

The undersigned offers for sale the Buildings, Toole, Machinery, Patterns, &c., &c., belonging to the company, consisting of Hot-Punched Nut Machines, Washer Machines, Compound Punches and Shears, "Burdict's" Bolt Headers, "Abb's" Bolt Headers, "Abb's" Threading Machines, Lathes, Planers, Drill Presses, Blacksmiths' Tools, &c. &c., all in complete repair and in successful operation.

The plant as a whole will be sold at a very low price and on favorable terms.

For further information apply to the undersigned in person or by letter, WM. H. STONE, President and General Manager.

For Sale.

The Stock and Fixtures of a retail Hardward store in Ansonia, Conn.; inventory from \$5000 to \$10,000; stock cean. For particulars inquire of FRANKLIN BURTON,
Ansonia, Conn.

59 DUANE ST.

We have rented the above-named building in New York City for a salesroom and branch factory, and shall be glad to see all our old friends and patrons, as well as any in need of anything in our line. Dies a specialty.

THE STILES & PARKER PRESS CO., Middletown, Conn

\$140.

We have 12 8-Horse Vertical Engines, 6 x 6 cyl inder, complete, that we will sell for \$140, cash

to reduce stock, LOVEGROVE & CO., Boilers, Engines and Machine Tools, 152 N. Third St., Philadelphia.

COPYRIGHTED Hardware Price Book. Pocket Edition. 240 Pages. Revised and Improved, 1884. One copy, \$4.00; three copies, \$10.50; six copies, \$20.00. Sent, post-paid, to any address on receipt of price by B. LABBERSON, Portland, Oregon; David Williams, 8; Reade St., N. Y., A. F. Shapleigh & Cantwell Hdw. Co., St. Louis, Mo., or William Blair & Co., Chicago, Ill.

LAMBERSON'S

FIRM of English merchants and manufacturers require, January 1, 1885, an agent in New York, to obtain orders for English Saddlery, Sheep Shears, Chains, General Hardware, &c. Payment by com-

Special Notices.

NEW AND SECOND-HAND

MACHINERY.

187-in x 21 ft. Bed Lathe. 2d-hand.
180-in. x 40 ft. Bed Lathe.
188-in. x 20 ft. Bed Lathe.
188-in. x 20 ft. Bed Lathe.
18 Engline Lathes, 1r in to 74 in. sw. New and 2d-hand.
2 Plain Lathe, back-geared. 2d-hand.
5 Hand Lathes, 9 in. to 22 in. sw. New and 2d-hand.
10 Val Turning Lathe. 2d hand.
14 Iron Planers, 16 in. to 50 in. wide. New and 2d-h'd.
5 Shapers, 6 in. to 20 in. stroke.
18 Fower Drill Presses. New and 2d hand.
18 Gang Drills. New and 2d hand.
18 Bench Drills. New.
18 Cost Drills. New.
19 Cost Drills.

Bench Drills. New.
Post Drills. New.
Post Drills. "
Post Drills. "
Post Drills. "
Post Drills. "
Bulling Machines. New and 2d-hand.
Gear Cutters.
Centering Machines.
Puttar Grinder.

Serew Machines.

Cuttor Grinder.

s Nut rappers,
s Screw Machines.
t Cutter Grinder.
D Emery Grinders, different styles.
Folishing Stands. 2-hand.
Steam Haumers.
Shaft Straighteners.
Punching Presses.
Foot Presses.
Drop Presses.
Drop Presses.
Fitter Frees, six plates. Second-hand. Cheap.
Lot Headers. Crimpers, Formers, Press s, Dies, &c., for Small Cans. 2d-hand.
Lot Grindstone Frames, Pulleys, Hangers, Chucks, &c., &c.

Ac., &c. and 7 Sturtevant Blowers. 2d-hand.

11 tillw-li Heater, 3ft. x 3 ft. 2d-hand.

12 ft. x so in. Cylinder Boiler. 2d-hand.

13 ft. x so in. Cylinder Boiler. 2d-hand.

All the above at extremely low prices and on lavorable terms.

Write and state just what you want. J. M. BADCER. 49 DEY STREET, New York City.

For Sale.

35-Gal. Steam-Jacketed Kettles.
100-Gal. Steam-Jacketed Kettles.
100-Gal. Steam-Jacketed Kettles.
100-Gal. Steam-Jacketed Kettle.
100-Gal. Steam-Jacketed Kettles.
100-Ga

H. M. SCIPLE, 107 and 109 N. 3d St., Phila. Machine Shop for Sale.

with the good-will of a long-establi-hed business, located in the center of the manufacturing district of the city of Chicago. Contains about ten Lathes, three Planers and other Tools in proportion, including a complete line of Engine Patterns—Slide-Valve, Variable Cut-Off and some Automatics. Also, long and valuable lease. This is a fine, complete plant, with the best modern tools throughout, and will be sold at a great bargain. The owner desires to sell on account of poor health, and will give time on good security.

Address "MACHINE SHOP," Office of The Iron Age, 36 Clark St., Chicago, Ill.

For Sale.

After Jan. 1 1885, a clean, neat stock of Hardware, Stoves, Tinware and Stove Fixtures, with Tin and Cornice Shop connected, doing a big business. Have contracted 25 jobs of Cornice in the last six months. Stock is located in one of best business towns in Texas—town of 10,000 inhabitants; has five railroads, street cars, gas and water works, and only 10 years old. Stock will invoice about \$10,000. Term cash.

Address "STUCK No. 1."

Office of The Iron Age, 83 Reade Street, New York.

For Sale, wing to the death of one of the partners and ill-

best retail Hardware store in Kansas City. For further particulars, address P P. BURROUGH, Kansas City, Mo. Special Bargains in Machinery.

health of the other, the Stock and Fixtu es of the

s Rotary Pumps, \$15 each. Steam and Boller Feed Pumps. Bolt Cutter, 14 to 1% in., geared, \$7c. 2 Portable Hoisting, Engines, \$300 and \$350. 8 H.-P. Engine, \$152; to H.-P., \$150; 12 H.-P., \$160; 15 H.-P., \$175; 20 H.-P., \$200. Second-hand Engine Lathes, 16 to 30 in. swing; 3d-hand Planera, 6 sizes; Drill Presses, 6 sizes; Punch Presses. All practi-cally good as new. Also full assortment NEW Drills, t'inners, Lathes, Engines, &c, &c. AMERICAN TOOL CO., Cleveland, Ohio.

Lathes for Sale. Shears for Sale. Engine Lathe, 19 in. swing, 7 ft. bed, Whitcomb, maker, weight soco ibs.; price only \$200, with counter and gears. Engine Lathe 14 1-2 awing, 6 ft bed, Wood, Light & Co. make; complete, \$150; both these lathes are in running order. One Power Shear, new, for 5-1 a plate from. One new Alligator Shear, cut I 1-4 round or 3-4 x 2 flat bar from. One new Power Press, punching I-1x x 1.9 A largeword smaller Presse, power and forth

1-2. Also several smaller Presses, power and foot. Peerless Punca and Shear Co.. 38 Dey st., New York. For Sale.

A stock of Shelf and Builders' Hardware, Stoves, &c., amounting to from five to eight thousand doilars, well-established business, annual sales \$20,000 to \$35,000, which can be increased. Will sell part on time to responsible purchaser. tood reasons for selling out. This is an exceptional opportunity for party wishing a Western Hardware Business. For full particulars, address. for party wishing a Western Market For Full particulars, address,

"F. O. B.,"

Sioux City, Iowa.

FOR SALE.

THE NARROW GAUGE ROLLING STOCK OF THE PHILA. AND ATLANTIC CITY RAIL-ROAD, consisting of 11 Locomotives, 50 Passenger and Excursion Cars, 20 House Cars, 20 Gondola Cars, and a few Coal and Dirt Dump Cars. Gauge of road 3 feet 6 inches. For particulars, address

W. S. WILSON, Pur. Agt.,
227 South 4th St., Philadelphia.

For Sale.

Over 500 Engines and Boilers can be bought below cost; must reduce stock. 107 and 109 N. 3d. St., Philadelphia. FOR SALE.

24 in Planer, five Drill Presses, four Lathes, Milling Machine, Blade Grinder, Nut Punch, Bar Shear, 6-inch Allen Governor. A. G. BROOKS, 261 N. Third St., Phila.

For Sale.

4 to 60 H.-P. Horizontal Engines. 2 to 40 H.-P. Vertical Engines. Steel Bollers, all sizes, as low as fron.

A. G. BROOKS, 261 N. 3d Street, Philadelphia.

W ANTED.—A gentleman who is well acquainted with the Jobbing Hardware Trade of the Northern States, East and West, wants the sale of two or three factures' goods. Would like a Nail Works. Address Office of The Iron Age, 83 Reads Bt., New York.

Special Notices.

OFFICE OF

MANHATTAN HARDWARE CO.,

MANUFACTURERS OF

Hardware Specialties.

Reading, Pa., November 1, 1884.

Change in prices of all goods made by us. Prices good for 15 days from date. Terms 1b days, no discount for cash. All goods delivered F. O. B., Reading. No charge for cases or cartage. No deviation from the following prices for orders less than \$1000. None but dealers in Hardware can get our goods at these prices. We sell no others.

Per doz.

134 in. Pullies, in Bulk, Polished Wheel, Plain
Front, Extra Heavy
2in. Pullies, in Bulk, Polished Wheel, Plain
Front, Extra Heavy
2i, in Pullies, in Bulk, Polished Wheel, Plain
Front, Extra Heavy
234 in. Pullies, in Bulk, Polished Wheel, Plain
Front, Extra Heavy
235 in. Pullies, in Bulk, Polished Wheel, Plain
Front, Extra Heavy
37 in papers, 1 cent per doz. more. Polished and
Bronzed, in papers, 3 cents per doz. more.

Locks and Latches. No. 308, 44-inch Upright Rim Knob Locks,
Tinned Iron Key, Iron Bolts, 1 Tumbler, 12
changes, without knobs, complete. \$
No. 311, do. do., with Stop.
No. 313, do. do., "Brass Key.
No. 313, do. do., "Brass Bolts and Key
No. 315, 44-inch Horizontal Rim Knob Locks,
same finish as No. 311.
No. 336, 44-inch Horizontal Rim Knob Locks,
Brass Key.
No. 327, 44-inch Horizontal Rim Knob Locks,
Brass Bolts and Key.
No. 316, Horizontal Knob Latch, 25-2 334, Iron
Bolt and Hub.
No. 218, Horizontal Knob Latch, 25-2 x 334, Iron
Bolts and Hub.
No. 218, Horizontal Knob Latch, 25-2 x 334, Iron
Bolts and Hub.
No. 218, Horizontal Knob Latch, 25-2 x 344, Iron
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No. 218, Horizontal Knob Locks, 25-2 x 344, Iron
Bolts and Hub.
No. 218, Horizontal Knob Locks, 25-2 x 344, Iron
Bolts and Hub. House Hall Thumb Piece

No. 450, Mortise Lock, 3½-inch, Polished
Front, Flat Timed Key
No. 67, Thumb Latches, Wrought Iron Latch,
Japanned, weight 6 pounds per doz.
No. 6, Pittsburgh Latch, weight 6 pounds per

doz	.5
Brackets.	
Per doz. p No. 34, 4 x 5, Ornamental Store Shelf Brack-	air
ets, Japanned. No. 85, 5 x 6, Ornamental Store Shelf Brack-	80.8
No. 35, F x 6, Ornamental Store Shelf Brack-	.6
ets, Japanned No. 37, 6 x 8, Ornamental Store Shelf Brack-	. 6
ets, Japanned No. 39, 8 x 10, Ornamental Store Shelf Brack-	.8
No. 39, 8 x 10, Ornamental Store Shelf Brack-	1.1
ett, Japanned No. 40, 8 x 12, Ornamental Store Shelf Brack-	
ets, Japanned	1.4
ets. Japan'd. Packed with Screws. Br'nzed.	.7
No. 50, 5 x 6, Ornamental Store Shelf Brack- ets, Japan'd. Packed with Screws	
ets, Japan'd. Packed with Screws No. 55, 6 x 8, Ornamental Store Shelf Brack-	. 8
ets, Japan'd. Packed with Screws	1.1
No. 60, 8 x 10, Ornamental Store Shelf Brack-	1.8
ets, Japan'd. Packed with Screws No. 65, 8 x 12, Ornamental Store Shelf Brack-	1.0
ets, Japan'd. Packed with Screws	2.8
No. 70, 4 x 5, Ornamental Library Brackets,	.8
Packed with Screws	
Packed with Screws	1.1
Packed with Screws	1.8
No. 85, 8 x 10, Ornamental Library Brackets.	
Packed with Screws	2.1
Packed with Screws	2.7
No. 100, 4 x 5, Ornamental Cabinet Brackets,	
Packed with Screws	1.0
Packed with Screws	1.8
No. 110, 6 x 8, Ornamental Cabinet Brackets,	
Packed with Screws No. 112, 7 x 9, Ornamental Cabinet Brackets,	1,5
Packed with Screws	1.9
Packed with Screws No. 115, 8 x 10, Ornamental Cabinet Brackets,	
Packed with Screws	2.8
Packed with Screws	2.9
No. 145, 10 x 12, Ornamental Cabinet Brack-	

No. 145, 10 x 12, Ornamental Cabinet Brack- ets, Packed with Screws	8
Broughton's Patent Burglar-Pro	oí
Sash Lucks.	
No. 1. Iron, Etruscan Bronze, Plain Lever.	a
No. 1, Iron, Etruscan Bronze, Plain Lever, fine finish. No. 2, Iron, Etruscan Bronze, Porcelain Knob, fine finish. No. 6, Iron, Etruscan Bronze, Plain Lever, five finish. No. 7, Iron, Etruscan Bronze, Porcelain Knob, fine finish. No. 10, Iron, Etruscan Bronze, Plain Lever, fine finish. No. 15, Iron, Etruscan Bronze, Plain Lever, fine finish.	\$ C.
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fine finish. No. 15, Iron, Etruscan Bronze, Porcelain Knob, fine finish. No. 39, Iron, Etruscan Bronze, Ornamental, Plain Lever, fine finish. No. 35, Iron, Etruscan Bronze, Ornamental, Porcelain Knob, fine finish. No. 35, Iron, Olympian Bronze, Ornamental, Polished, Plain Front, fine finish. No. 35, Iron, Olympian Bronze, Ornamental, Porcelain Knob, fine finish. No. 40, Iron, Olympian Bronze, Ornamental, Real Bronze Knob, fine finish. No. 41, Iron, Olympian Bronze, Ornamental, Plain Lever, Extra Heavy, fine finish. No. 44, Iron, Olympian Bronze, Ornamental, Porcelain Knob, fine finish. No. 45, Iron, Olympian Bronze, Ornamental, Porcelain Knob, fine finish. No. 45, Iron, Olympian Bronze, Ornamental, Real Bronze Knob, fine finish. No. 45, Iron, Olympian Bronze, Ornamental, Real Bronze Knob, fine finish.	
No. 20, Iron, Etruscan Bronze, Ornamental,	•
No. 25, Iron, Etruscan Bronze, Ornamental,	
No. 3), Iron, Olympian Bronze, Ornamental,	
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No. 44. Iron, Olympian Bronze, Ornamental,	۰
No. 43, Iron, Olympian Bronze, Ornamental,	
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No. 50, Iron, Olympian Bronze, Ornamental, Nickle-Plated, Porcelain Knob, fine finish	1.
No. 51, Iron, Olympian Bronze, Ornamental, Nickel Plated Brass Knob, fine finish	1.
No. 55, Cast Brass, Polished, Plain Lever	1.
No. 70, " " Brass Knobs No. 78, Ornamental Bronze Metal Knob, with	1.
No. 80, Ornamental, Polished, Bronze Metal	1.
No. 85 Ornamental, Extra Polished, two	1.
Bronze Metal Knobs, very heavy, with	1.
No. 90, Ornamental, Polished, Extra Heavy Porcelain Knob, with Screws	1.
Screws No. 90, Ornamental, Polished, Extra Heavy Porcelain Knob, with Screws No. 96, Ornamental, Polished, very heavy Bronze Metal Knob and Bronze Metal	
No. 100, Ornamental, Polished, two Bronze	1.
Metas ocrows	2.
No. 58, Ornamental, Nickel Plated, very heavy, Porcelain Knob, with Screws	1.
Porcelain Knob, with Screws	2,1
Porcelain Knob, extra heavy, with Screws. No. 73, Ornamental, Cast. Polished Brass. Extra Heavy, Brass Knob. No. 185, Ornamental, Real Bronze Metal, Flat	2.
Lever, extra ponsu and incquered, with Real	
Bronze Screws No. 165, Ornamental, Real Bronze, Bronze Metal Knob, extra heavy, Real Bronze	1.
	1.5
No. 175, Ornamental, Real Bronze, two Bronze Metal Knobs, with Real Bronze Screws,	4.1
very fine. No. 185, Ornamental, Real Bronze, very heavy, Bronze Metal Knob, with Bronze Screws.	1.
	2.
Screws. No. 200, Ornamental Iron. Iron Knob, very heavy, Etruscan Bronze finish No. 201, Ornamental, Iron, Polished Iron Knob, very fine and extra heavy No. 205, Ornamental, Real Bronze with	8.
No. 201, Ornamental, Iron, Polished Iron	
No. 205, Ornamental, Real Bronze with	

Bronze Screws, very heavy, our last design. 210, New design, Nickel Plated, very eavy, with Nickel Plated Knob and Nickel

No. 155, Sash Lifts, Ornamental, Bronz

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No. 80, 1	316-in	ch Ornan	iental F	ompei	Pronze	e,		37
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Packed with Screws..... Coat and Hat Hooks.

	Per	gr
No. 75, Japanned, 1814 pounds		. 8
No. 77, Coppered,		0
No. 210, Japanned Bull Frog Pattern		0
No. 215, Coppered, "No. 110, Schoolhouse Hook, Japanned,		٠
No. 115, Schoolhouse Hook, Coppered, e	xtra	
heavy		*
	Pe	er
No. 180, Harness Hooks, 414 inch, Japan	ned.	. Ş

5% inch, 5% inch, 6 inch, No. 260, Ornamental Coat and Hat Hooks, Bronzed..... No. 250, Ornamental Coat and Hat Hooks, Polished and Bronzed. No. 256, Ornamental Coat and Hat Hooks, Pompeli Bronze. No. 250, Ornamental Coat and Hat Hooks, Etruscan Bronze. No. 250, Ornamental Coat and Hat Hooks, Olympian Bronze.

1.95

2.40

2.47

1.50

Pompeil Bronze. 2,48
No. 140, Ornamental S-inch Bird Cage Hooks,
Etruscan Bronze. 23
No. 145, Ornamental 10-inch Bird Cage Hooks,
Etruscan Bronze. 29
No. 150, Ornamental S-inch Bird Cage Hooks,
Olympian Bronze. 26
No. 160, Ornamental S-inch Bird Cage Hooks,
Etruscan Bronze. 24
No. 170, Ornamental 10-inch Bird Cage Hooks,
Olympian Bronze. 38
No. 180, Ornamental S-inch Bird Cage Hooks,
Olympian Bronze. 38
No. 180, Ornamental S-inch Bird Cage Hooks,
Olympian Bronze. 38
No. 180, Ornamental S-inch Bird Cage Hooks,
Olympian Bronze. 38 Olympian Bronze.

Olympian Bronze.

Olympian Bronze.

Casters.

61		
Porcelain '	Wheel, from	136¢ to 216
Lignum	Vitæ Wheel,	from 23
ra.		
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Ligny	m Vitm Who	wi
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No. 8,	66	69	Lignum	Vitae "	6846
No. 4.	65	64	66	60 06	7360
No. 4,	64	5.6	Porcelair	D 15	6824
No. 5,	44	6.6	80	54	7 6
No. 5,	8.5	4.6	Lignum	Vitee "	8 ¢
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		ntal Store			
		mpian Br			
		ntal Store			
		ipeli Broz			
		ental St			
		ery heavy			
No. 875,	Ornamer	ntal Matcl	s Safes, li	ron, Pom	

sh, very elegant... prnamental Match Safes, Iron, Pom-Blind Hinges. for Wood, for Southern trade, sets in a case... per case, to 194, for Wood, extra heavy, for Cold Climates, weight per case, 6 doz. sets, 130 lb., to. 7, for Brick Mortise, Self-Locking, Wrought Iron Locking Device, with Inside Fastenings. Patented September 8, 1884. Weight per set, 8 pounds... per set, to, 150, Cupboard Catch, Patent, with Screws, Express Bronze.

Screws. All Sash Locks from Nos. 30 to 210, packed with

Miscellaneous. Barn-Door Hall, Oval, extra heavy...per foot, Well Wheels, 8 inches......per doz... Barn-Door Hangers, 6 inches.....per set, Barn-Door Hangers, 8 inches....per set, Hay Fork Pullies, Soild Eye, 6 inches.per dos.

Trade Report.

British Iron and Metal Markets.

[Special Cable Dispatch to The Iron Age.] LONDON, WEDNESDAY, October 29, 1884.

Scotch 1																
	e d	uote	mai	26)I	8		b	r	9.1	10	dia	3	3	18	1
lows:																
Coltness, along	rside	e, Glas	gow													. €
Langloan,	86	44														.6
Gartsherrie,	8.6	6.6														.8
Summerlee,	6.6	6.6														.8
Carnbroe,	84	4.6														
Glengarnock,	66	Ardro														
Eglinton.	6.6	6.6														
Dalmellington.	6.6	6.6														4
Shotts,	6.6	at L	eith													
Lighterage fr	rom															
ton.			0.000	_			,		-	-6	, -			-		-/

Cleveland Pig.-The market is unhanged. We continue quotations, f.o.b. hipping ports:

No. 4 Forge ... Bessemer Pig-Is a little steadier. Quotions are unchanged, viz.: W C. Hemaes, 44/6 @ 46/ for mixed lots, Nos. 1, 2 and

equal portions, f.o.b. shipping ports.

Staff. Ord. Marked Bars. 7 10 0 0 " Medium " 6 0 0 0 6 10 " Common " 5 10 0 0 5 15 Hoops, 20 W. G. and over. " Common Best. 6 15 0 0 6 10 " Common Best. 6 5 0 0 6 10 6 7 " Common. 6 0 0 0 6 7 Sheets, 30 W. G. and under. " Ordinary Best. 7 15 0 0 8 5 " Common. 7 5 0 0 7 15 Welsh Bars. 4 17 6 0 5 2 *** Welsh Bars. 4 17 6 0 6 2 5		£	я,	d	£		9.	d
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" Common 7 5 0 @ 7 15		7	15	0	0	8	- 5	6
	Welsh Bars		17					

Old Rails-Are a little firmer. We quote ld D. H.s £2. 17/6 @ £3, c.i.f. New York.

Scrap.—The market is unchanged. Heavy rought is quoted £2. 10/ @ £2. 12/6, c.i.f. New York.

Copper.-The market is a little weaker. We quote Best Selected, £58. 10/@ £59. 10/, and Chili Bars, £53 @ £53. 10/.

Tin-Is weaker. Straits Ingots, spot, £74 @ £74. 10/, and futures, £74 @ £74. 10/. Tin Plates.—The market is unchanged

1.87 We quote: Tin Plates, 10x14, 1st qual. Charcoal....19/6 @ 21/6 11 2d 11 41 18/6 @ 21/0
11 1st 11 Coke......17/6 @ 18/

....15/ @ 15/6 Spelter-Is unchanged. We quote Ordinary, at shipping ports, £14. 12/6 @ £14. 15/ Lead .- The market is quiet. We quote

Common English Pig, £10. 15/@ £11. Freights -Steam from Glasgow to New York, 2/6 @ 3/; Liverpool to New York, 5/; Liverpool to Philadelphia, 5/ @ 6/6, and London to New York, 7/6 @ 9/6.

Financial.

Office of The Iron Age, WEDNESDAY EVENING, October 29, 1884.

In the week preceding the Presidential election business interests necessarily yield to the pressure of political discussion. Rarely on previous like occasions bave the mercantile classes have so deeply absorbed in the one pervading topic popularly as sumed to be identified in every point of view with the national welfare. Respecting general business, while accounts from all quarters indicate prevailing dullness, the Clearing- for the protection of its reserve, and yet all House returns from leading cities show a the while inclined to droop, because of the marked increase in the volume of trans | lackness of the demand for money." From actions. The total decrease compared with the corresponding date last year is 196 %; appear, contrary to recent intimations, that outside of New York, 10.4 %, against 36 and 14 % decrease reported one week ago. Something is due to the stimulus of cooler weather and more activity in stocks. The more favorable indications as regards the general situation comprise a promise of larger exports of provisions and cotton and an increasing movement of the crops, enabling holders to realize, and at the same time affording railways more active transportation. The industrial situation is unchanged. The Stock Exchange markets during the

past week were generally dull, the leading stocks showing little variation, compared with the previous week. New Jersey and Lake Shore both suffered from reports unfavorable to their financial status, the latter touching a new issue of bonds. The condition of the coal trade also had a depressing influence, but throughout the market was in control of professional traders. A decision of the court discolving the temporary injunction obtained by the Baltimore and Ohio was pronounced a complete victory for the Pennlease of the West Shore line, which was sup- a fair export movement of domestic produce as collateral for the company's notes, have total is \$267,865,910, compared with \$295,-been advertised for sale at auction. As a 686,371 for the corresponding period of 1883.

Kansas and Texas, 16: Lake Shore, 66: Missouri Pacific, 91 7/8; Jersey Central, 413/8; Northwestern, 85%; Northern Pacific preferred, 42%; Pacific Mail, 5134; Reading, 2214; St. Paul, 7414; Union Pacific, 5314 Western Union Telegraph, 60; Illinois Central, 116; Louisville and Nashville, 2434 Michigan Central, 54; New York Central, 841/2; New York and New England, 101/4 Oregon and Transcontinental, 121/4.

United States bonds closed as	follows	3 :
U. S. 8 per cents	Bid. 1	Asked
U. S. 4368, 1891, coupon U. S. 48, 1907, coupon	11357 12134	114 122
U. S. Currency 6s, 1895	127	_
U. S. Currency 6s, 1896 U. S. Currency 6s, 1897	18016	winer
U. S. Currency 6s, 1898 U. S. Currency 6s, 1899	18816	-
The prices of grain continue	weak.	inso

dull both in the West and on the seaboard. upon as indicating an unusually high-grade 17¢, and Bolt Copper, 19¢. Cash corn is in better demand for export at a decline. Provisions, under speculative influence, have been forced down to the lowest bacon for future delivery. The hog supply is quite liberal. Cotton is quiet. Exports since September 1, 580,000 bales, which is an excess of 74,000 bales, compared with 1883. Among dry-goods jobbers the demand for and movement of merchandise is very inactive. Coffee is dull and easier. India-rubber rules slow, and is unsettled in prices. Leather and hides are quiet. Corda ge-Manila, 151/2¢; Sisal, 91/2¢. Lumber dull and uninteresting. Petroleum is lower; trading quiet. Raw sugar steady; demand unimportant. In tobacco trading is moderate with some export interest. Ocean freights are fairly active, the demand being principally for cotton, breadstuffs and provisions.

The bank return for the week shows an increase of \$517,100 in surplus reserve, which now stands at \$32,182,850, against \$307,550 below at the same time last year, and \$1,597,900 above at the corresponding date in 1881. The loans show only a trifling loss. As gold is coming in with considerable freedom from Europe, and as the demands for currency in the interior are light, it is surmised that the already enormous accumulation of money at this center will increase rather than diminish until the end of the year. Compared with last year the banks have \$34.300,000 more cash and \$34,-300,000 less loans, which is considered a very remarkable exhibit. The rates for sterling exchange were reduced, cotton and other commercial bills being in much better supply, but are again stiffening, in anticipation of a further increase in the Bank of England rate of discount. The light volume of imports, taken together with the comparatively free export of domestic products, indicates the probable continuance of low rates of exchange and further arrivals of gold from Europe. Our bankers will receive at least \$1,500,000 within a week by the British steamers. In London money is firmer, but the Bank of England rate of discount remains unchanged at 3%. The London Economist of October 18 says the market is "sensitive and wavering, sustained on the one hand by the apprehension that the bank may have to take further measurenquiries made in Wall street it does not any noticeable amount of American securities is going abroad, nor is there at present a margin of profit in specie imports.

The money market continues easy, with loans at the lowest rates of interest. quote indorsed bills receivable 51/2 @ 6 %; four months' acceptances 6 @ 7 %. Single-name paper is not marketable. In the West bankers notice a slight quickening of business, but the prevalent feeling is that we are to have a dull winter, the current low prices in Wall street having a depressing effect. The advent of cold weather is anticipated with hopefulness.

There were 234 failures in the United States reported to Bradstreet's during the veek, against 209 in the preceding week, and 200, 137 and 117 in the corresponding weeks of 1883, 1882 and 1881, respectively The increase is most noticeable in the West.

The imports of foreign merchandise at this port during the week were light, the total being \$6,261,113, of which \$4,463,079 was general merchandise, and the remainder sylvania. Within the last day or two there dry goods. Since January 1 the total is was little disposition to operate, pending de- \$355,570,261, compared with \$382,886,236 velopments in trunk-line affairs. To-day for the corresponding period of 1883. Com-New York Central was conspicuous for its pared with the previous week, the total weakness, but as concerns negotiations for a shows a decredse of \$1,745,900. There was posed to offer a situation of present difficul- from this port during the past week, the ties, the subject appears to have been total being \$6,778,244, against \$6,673,379 dropped. As the case stands there is little hope same week last year. There was an increased of improvement. Respecting the Pennsylvania movement of cotton and flour, but petro roads, advices were received that a large leum and provisions were exported to only block of the Reading's securities, deposited a moderate export. Since January 1 the per foot, 1146 per doz. \$1.50 been advertised for sale at auction. As a whole, the market advanced. Quotations as per set, 276 sper doz. \$1.10 follows: Lackawanna, 10316; Erie, 1276; imports of specie for the week were \$4,871, at \$1.

643, nearly all in gold, as against a total of \$599,793 for the corresponding week last year, and the exports for the same time were \$284,677, mostly in silver.

Metal Market.

Copper.-Our market during the week under review has been quiet, but steady, some 100,000 fb Lake Superior selling at 13¢, while other brands sold at 12¢ @ 12½¢. London, the last few days, has been steady at £53.5/ Chili Bars, and £59 Best Selected. Messrs. W. T. Sargant & Sons write from there, October 4: "Copper consumption continues to expand marvelously, and has considerably more than absorbed the excess of supplies from the recently-opened Montana much that exporters show a fair degree of district. It seems probable that this district, interest and are buying more freely, well up like that of Arizona, cannot produce Copper to the carrying capacity of available ocean at anything approaching market rates The tonnage. The scarcity of the latter, how- latest news from Montana is that at the ever, operates as a hindrance. In the West chief mine the miners are discharged. low prices do not seem to check shipments Visible supply of Copper in England and from farmers' hands, as accumulations are France October 1: 40,823 tons, against steadily taking place. The receipts of spring 49,695 in 1883, and 46,945 in 1882; price of wheat are especially large. Speculation is Chili Bars £54, against £63 and £71." Manufactures may be nominally quoted as under: The receipts of new corn are commented Bottoms, 19¢; Braziers, 19¢; Sheathing, This afternoon level, and a larger proportion of cured corn than usual between harvest and January I. little weaker. Best Selected £58. 10/@ £59. 10/, and Chili Bars £53 @ £53. 10/.

Tin.—The rebound in London having been of short duration, Straits there declining prices of the season, and a good export from £74. 5/ yesterday to £73. 10/, spot and movement is noticed in refined lard and three months, this morning the market here has been upset again, with few buyers and a weak tendency at the nominal quotation for Straits toward the close of 16 3/4. Messrs. W. T. Sargant & Sons write from London, October 4: "The Tin market, which had an upward tendency a month ago, the quotation being £83 per ton, gradually eased off, and within the last few days assumed a distinct downward tendency, sales being effected at continually declining rates, until £78. 5/ was accepted. At this price a good demand set in, and also for forward delivery at a moderate premium, but the closing value to-day is £78, spot, and £78. 10/, three months, with a quieter tone. We are unable to assign any reason for this drop arising from the position of the metal itself. It is, however, as well that the trade should not forget that we are £18 and £30 P ton below the prices of 1883 and 1882; that the new supplies of this year are perceptibly smaller than last year, and that we have an expanding consumption, which has for a long time been in excess of production. Such a position used not to be reckoned unhealthy and a warrant for declining prices. Total new supply for Europe and America, nine months, Straits and Australian, 18,070 tons, against 19,346 in 1883; 15,182 in 1882, and 14,533 in 1881. We are cabled from London that "the market is weaker. Straits, spot, £74 @ £74. 10/, and futures, £74. 10/ @ £75." Tin Plates,— There has been a dull and rather weak market, so that our to-day's quotations might in some instances be shaded. We quote at the close, large lines, ordinary brands, $\frac{1}{2}$ box: Charcoal Bright, $\frac{1}{2}$ 5.12½ @ \$5.25; do Ternes, \$4.62½ @ \$4.87½; Coke Tin, \$4.62½ @ \$4.87½, and do. Ternes, \$4.50. Liverpool canoled Charcoal, $\frac{1}{2}$ 6. From London we are Coke, 14/3 @ 14/6. From London we are informed that there is no change.

Lead,-This metal has relapsed into great dullness, and a lower figure has been accepted, 200 tons Common and 200 Refined selling at \$3.65, which is the closing price for both, while the Western centers of distribution remain featureless and weak. London also gave way from £10. 15/, Seft London also gave way from £10. 15'. Soft Spanish, yesterday, to £10. 12'6 to-day. Common English Refined, £10. 15' (@ £11. Manufactures are quoted as follows: Lead Pipe, 5 % & B; Sheet Lead, 6 % ¢; Tin-Lined Lead Pipe, 15¢, and Block-l'in Pipe, 10¢, allowing in trade for Old Lead delivered in New York 3¢ % B. Shot: Drop, 6¢; Buck, 7¢; Chilled, 7¢. Shot in 5-lb bags, 1¢ % B extra.

Spelter and Zine.-While in Europe the market has remained well supported on the basis of £14. 10/, Silesian, in London, we have gone on receding here, sales of Common Domestic being effected at \$4.40, larger lots probably being attainable at the close at Nor is it at all sure that the European market will retain its firmness during the winter time. In other words, the general outlook for this metal appears the reverse of brilliant. We quote Silesian 41/4 @ 47/4 nominally. Bertha Refined may be quoted 8¢, and Sheet Zinc is quiet at 53/4 @ 51/4 Domestic. From London we hear per cable that there is no quotable change.

Antimony.—Hallett gave way in London this morning from £41 to £40, but, being quite scarce here, it is upheld at 10\$\psi\$, and Cookson at 10\$\psi\$\$\phi\$\$ @ 10\$\psi\$\$\psi\$\$.

The Illinois Inventors .- The inventors of the State of Illinois closed their convention on Saturday, the 25th inst., at the Sherman House, Chicago. The meeting proved a success, and hereafter there will be a strong association. Constitution and By laws made a report, in which the title of the organization was fixed as the Inventors' Association of the State of Illinois, the object of which is to secure such legislation by Congress as shall tend to encourage invention and protect inventors in the enjoyment of their rights. The society was made an auxiliary of the National Association. The following officers were elected: President. F. M. Mahan; vice-president, John Lane; treasurer, J. T. Dongine; librarian, B M Des Jardins. Dongine; librarian, B M Des Jardins. Delegates to the national convention will be named by the Executive Committee at a meeting to be held at the office of the president, No. 190 Lake street. The anwhole, the market advanced. Quotations as According to the Custom-House reports, the nual dues of the association were fixed

Trade Report.

Philadelphia.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, October 28, 1884.

Pig Iron.-There is but little change to report in the Iron trade, the demand having been limited to small lots for immediate use. This policy has prevailed for some time past, and is likely to prevail so long as uncertainty in regard to the future continues. The volume of business has shown some little increase, however, during the past few days, and, judging from the number of inquiries that have been made, prospects are somewhat more favorable for the near future. Stocks have been reduced to the lowest possible limits, and to keep moving at all, purchases of material have to be made, even though it may be in small quantities. This point was reached some time ago with the majority of consumers, and now it is no doubt universally the case that every order that comes in has to be met with a proportionate purchase of Pig Iron. Hence it may be inferred that the demand will be at least in proportion to consumption, and, if confidence in values is sufficiently restored, it may be more, and doubtless will be more, as soon as prices begin to show a hardening tendency. In the meantime the general condition of business is such as to preclude the probability of any material change in the near future. There is a possibility, of course, that in case of a Republican success things might take a sudden start. Many importance enterprises which have been held in abeyance for some time might be set in operation, and these would set others in motion, and, although the probabilities of such an event are not great, the contingency is one not to be altogether ignored. There are contracts already closed of very considerable importance in the aggregate, but work has not been commenced, and may not be for weeks, perhaps not for months; but in any case it is only a question of time. There is a basis, therefore, for very considerable activity, providing things once take a start, and it would not be safe to make predictions without taking this into account.

Meanwhile, and until after the elections, no change whatever need be expected. Small sales are the rule and at about last week's figures. The tone of the market has been dull and heavy, but in spite of that prices have been fairly maintained. No. 1 Foundry has been taken at from \$19 to \$20 at tide, or its equivalent; No. 2 at \$18 @ \$18.50, and Gray Forge at \$16.50 @ \$17, according to brand, quantity, &c. There has been more prices can be held at about the figures now irregularity on the low-priced Irons than on standard or fancy brands, and when sales have been forced prices have had to suffer in proportion. For carload or 50 to 100 ton several thousand tons are likely to be made, but at low figures.

Foreign Iron .- Nothing doing at pres ent, and no inquiries likely to lead to business. Bessemer, nominally \$19 @ 19.50, and for special brands \$21 @ \$21.50. Latest sales Spiegel were at \$28 for 25 %, \$26 for 20 although small lots have been taken at full %, with further offerings at \$26.50 for 20 %, quotations. Sales at interior points have and \$23 for 10 @ 12 %.

Blooms. - Demand somewhat less active, and prices easier, although still quoted as before: Charcoal Blooms at \$52 @ \$53; Runout Anthracite, \$43; Scrap Blooms, \$38; Northern Ore Blooms, \$35.

Muck Bars .- Demand slow, and sales in quantity difficult to effect. Prices irregular, Choice No. 1 sells at \$19.50 @ \$20, f.o.b. cars, with \$28 @ \$29 at mill asked, according to location and quality of Bars.

Bar Iron.—There is nothing of interest \$9.50 @ \$10. to report in the Bar trade, business being of the same dull and unsatisfactory character as before. There are no indications of improvement, and such orders as are offered are for small lots for immediate delivery. The depression in business is strongly reflected in the scarcity of demand for Finished Iron, showing that consumption has been seriously curtailed. Prices are irregular, and more or less demoralized, although 1 8¢ @ 1.9¢ is still quoted for Best Refined Iron, but lower figures could be had on large orders or desirable specifications. Medium and low qualities from 1.6¢ upward.

Plate and Tank Iron .- A slight improvement is noticeable for small lots, but there is nothing like general activity. Some of the best-known mills are kept fully employed on small orders for the higher grades of Plate, but there is no inquiry whatever for large lots of Common Iron. Shipbuilding is duller than it has been for years, and the lack of demand from this source is severely felt. Tank Iron is also very dull, and, with nothing to offset the loss of demand it is not likely to hold out much longer. from these interests, business cannot be anything but unsatisfactory. Prices are un changed, as follows: Plate Iron, 2.1¢; Tank, 2.15¢ @ 2.25¢; Shell, 2.75¢; Flange, 3.75¢; Fire-Box, 4.25¢; Steel Plates, Flange, 3.5¢ @ 3.75¢; Fire-Box, 4.25¢.

Structural Iron.-The demand has been acter. confined to small lots, and the large contracts taken by leading companies are still held in change in the situation during the week unabeyance. There is not as much scarcity der review; business continues dull. Conof business as appearances indicate, but de-

so that at the moment there is really very lit- are just as indifferent about selling. Protle to go on with, notwithstanding the fact of duction is being reduced steadily, and in a business, and how long it will be before work will be commenced on a large scale is purely a matter of conjecture. The Phœnix Iron Railway work on their books, besides some thousands of tons of Bridge work, but owing to delays they still have plenty of room for early deliveries. Prices are about as last quoted, viz.: 2.1¢ for Angles, 2.25¢ for Bridge Plate, 2.75¢ for T's and 3.5¢ for the next change will be upward, although Beams and Channels, subject to the usual discount on large lots.

Sheet Iron .- There is very little doing at present. Only small quantities are taken as needed, and the total of business is light. Prices for small lots of best makes remain as

nast quoted, viz.:	
Best Refined, Nos. 26, 27 and 28 4	Ó
Best Refined, Nos. 18 to 25 836	ġ
Common, 1/4¢ less than the above.	
Best Bloom Sheets, Nos. 26 to 28 634	į
Best Bloom Speets, Nos, 22 to 25	
Best Bloom Sheets, Nos. 16 to 21 534	d
Common Red Plates, 3-16 to 16	þ
Blue Annealed	ė
Best Bloom, Galvanized, discount 5234	9
Second quality, discount 55	H
Common, discount 5736	į
THE	

Wrought-Iron Pipe.-The demand for small lots is fair, but outside of this there is very little doing. The collapse of the Empire Iron Works, as the combination was called, has had no effect whatever upon trade here. Their discounts have been ignored for some time past, and no one appears to have been bound by their regulations. Prices continue very irregular, buyers in many cases making their own terms. Under these circumstances it is difficult to quote with accuracy. Nominally, however, discounts are as follows: Butt-Welded Black Pipe, 45 %; Butt-Welded Galvanized, 30 @ 35 %; Lap-WeldedBlack, 60 @ 65 %; Galvan ized, 40 @ 45 %; Boiler Tubes, 60 %.

Steel Rails.-The position shows no material change, and the market may be called steady at last week's prices. There is a considerable amount of business in sight, but there is no special anxiety on either side to enter into very extended engagements. Lots of a few hundred to 2000 or 3000 tons each are inquired for, and at \$27.50 @ \$28 prices are firm, with a trifle over \$28 asked for certain deliveries or when the lots are small. Appearances indicate a steady market at current rates, for the reason that most of the mills which are in operation are pretty well supplied with orders, while those that are idle are not likely to start in at prices which to them would probably be unremunerative. Hence, with a reasonable certainty of a demand fully equal to the capacity of mills now in active operation, there is every reason for the belief that the quoted.

Steel Blooms and Slabs.-There is no change to notice, although there is considerable disparity in prices, due largely, howlots the rates quoted have been realized ever, to the variety of qualities offered. As without much difficulty, but beyond that the a rule, quotations are as last quoted, vis.: market will not stand much pressure. Some good-sized lots of low-grade Iron have been inquired for by Pipe founders, and sales of Blooms for special uses. Domestic Slabs are quoted from \$32.50 to \$35 at mill, according

> Old Rails.—The market shows no special change, the demand being, as before, irregular and uncertain. Philadelphia deliveries are held at \$18, with buyers at about \$17.50, been made at \$19 @ \$19.50, according to deliveries, and at these figures the market may be called dull and steady.

> Scrap Iren .- The demand is still confined to small lots, and to effect sales beyond that would be likely to result in lower prices. Sales chiefly at last week's figures, viz.: and ordinary qualities at \$18 @ \$19;

> Nails.-The demand continues fair, although nothing more than ordinary requirements are taken. Steel Nails are selling well at a slight advance over Iron. Prices continue unchanged, with possibly a trifle better feeling. General figures are \$2.10 @ \$2.15, according to circumstances.

Pittsburgh.

Office of The Iron Age, 77 Fourth Avenue, Prinsuugge, PA., October 28, 1884.

There is continued complaint in busines circles; both merchants and manufacturers are dissatisfied, and see little chance of improvement before spring. The labor question continues in an unsettled and unsatis factory condition; scarcely a day passes but a hitch is reported between employer and employed, and strikes are still of common occurrence. The Coal miners' strike in the Monongahela Valley, which was inaugurated early in the summer, still continues, although

Iron Ore. -There is but little Ore wanted the few furnaces in blast are buying very sparingly, and the indications are that this will be an exceedingly poor Ore market for some time to come. Advices from Cleveland continue of a most discouraging char-

Pig Iron.-There has been no important sumers, as a rule, are still refusing to buy lays of one kind or another keep work back, beyond immediate wants, although producers at \$17.50 @ \$18, gross ton.

arge orders being on the books. Tem- regular and legitimate way, without the aid porarily there is a considerable scarcity of of the shut-down project, which for a time was pushed in certain quarters with considerable energy. Some operators look for an increased demand next month, while others Company have a large amount of Elevated | do not expect a change in the situation until toward spring. Prices have undergone no quotable change here during the past 60 days, and, as cost of production has been reduced to lowest possible limit and there is no margin at present rates, it is thought there is not much prospect of an advance at present. There is a rumor of a lot of Southern Mill Iron having been sold, to arrive by river on the resumption of navigation, at \$15, four months, but it lacks confirmation. As a rule, consumers here are very chary about taking hold of an Iron that they know nothing about; indeed, most of them prefer to pay the difference for the product of home furnaces which they have been using and are familiar with; quality is looked at as well as price. Quotations may

	be given as follows:		
1	No. 1 Foundry\$19.00 @ \$20.00,	4 n	108.
1	No. 2 Foundry 17.50 @ 18.50,	4	60
1	Extra Foundry 21.00 @ 21.50.	4	6.6
1	Neutral Gray Forge 16.00 @ 16.50.		64
i	White and Mottled 14.50 @ 15.00,		66.
ł	All-Ore Mill		4.0
1	Charcoal, Warm-Blast 21.00 @ 24.00,		44
1	Charcoal, Cold-Blast 25,00 @ 27,50,	4	6.6
Į	Bessemer Iron 18.50 @ 19.00,	4	66

We can report sales of Gray Forge Neutral at \$16 @\$16.50, four months; Bessemer at \$18, cash, and Cold-Blast Charcoal at \$27, cash, and \$27.50, four months.

Muck Bar.—The last sale reported was at \$27.50, cash, but \$28, cash, is the general asking price, and there are but few sellers below the last-named rate.

Manufactured Iron.-The general position of the market remains unchanged : orders continue to come forward sparingly for the season, and but few of the mills are running full. It is rumored that Painter & Son will start up shortly on Cotton Ties. The firm in question for many years made a specialty of Ties. Wm. Clark & Son, of the Solar Iron Works, have been working for several weeks on Ties, and it is encouraging to know that our American manufacturers have succeeded in taking this Cotton-Tie trade from English competitors. Several of the mills are working on Pipe Iron, including two mills of Graff, Bennett & Co., and the Keystone. The regular trade continues dull, and prices are still quoted at 1 65¢ @ 1.75¢, 60 days, 2 % off for cash.

Nails.-There has been no important change in the general position of the market for several weeks; orders continue small, demonstrating an expectation on the part of buyers of lower prices, but there is a very fair business in the aggregate. We continue to quote at \$2, 60 days, 2 % off for cash, in car lots, and 5# @ 10# \$ keg additional in a jobbing way. Steel Nails, 15¢ W keg higher. The feeling still appears to be gaining ground that the latter are destined before long to supersede the former. Prices are about the same at Wheeling as in Pittsburgh.

Wrought-Iron Pipe.-The most important event of the week was the meeting of the Pipe manufacturers, although nothing definite was accomplished. One of the main objects of the meeting was to get out a new price list, but this was not accomplished. The meeting, which lasted two days, ad. journed to meet in New York. Prices are quoted as before, and our quotations are based on the last combination list, which is still quoted by all the Pipe firms, with the exception of Byers & Co., of this city, and Crane & Co., of Chicago, who have issued do., 30 % @ 35 %; Black Lap-Welded Pipe, many refuse to go beyond the last day of largely for the heavier number intended for 60 % @ 60 and 10 %; Galvanized, do., 40 % December. The quietness in trade does not roofing and siding on buildings. In light Wrought Turnings at about \$15, and Cast, @ 45 %. Selected Pipe or Pipe cut to speciaffect the firmness of the market. Sales numbers trade has been less active. Prices above quoted. Discounts for Boiler Tubes, ajons than they were several weeks ago. 571/2 % @ 50 %. Two-inch Oil Well Casing, 12¢ P foot, net; 5%-inch Oil Well Tubing, 40¢ P foot, net.

Steel Rails.-There have been no sales which we continue to quote \$28 @ \$29, cash, at mill.

Old Iron Rail .- There does not appear to be much doing, and in the absence of sales we continue to quote at \$19 @ \$20, according to quality, delivery, &c.

Old Steel Ratls .- Mixed lots are still uoted at \$17 @ \$18 P gross ton and very

Steel .- The general Steel trade continues dull and prices are weak, but without quot- lowest figures that would be expected by any able change. Steel Nail Slabs are still of the makers of first-class brands. This quoted at \$31 @ \$32 P ton, but consumers expect to be able to buy them for \$30 before for the next two weeks, and even less trade long. It is claimed that these Slabs are as is expected. We make the following quotacheap at \$30 as Iron Muck Bar at \$28 for making Nails

Railway Track Supplies .- Everything in this line continues very dull, with but at \$20; Lake Superior and Ohio, mixed, at little prospect of improvement before next \$20 @ \$21; Ohio Standard Black Band, No. spring. Prices unchanged. Spikes, 2¢, 30 I, at \$21; Southern, No. I, at \$18.50; No. days; Splice Bars, 1.6¢ @ 1.7¢; Track 2 at \$17.50; Silvery Soft at \$17.50@ \$19.50; Bolts, 234¢@ 256¢ per lb.

Serap.-No. 1 Wrought is quoted at \$17.50 @ \$18 P net ton ; Wrought Turnings, \$14 @ \$15 : Car Axles, \$25 @ \$26 : Old Car Wheels, \$16 @ \$17, gross ton; Cast Borings, \$12 @ \$12.50, gross.

Crop Ends-Are still quoted nominally

Chicago.

Office of The Iron Age, 86 and 38 Clark St., & Cor. Lake St., CHICAGO, October 27, 1884. Hardware.-The market for Hardware during the past week has been very quiet, though the cold snap that occurred about the middle of the week considerably improved the demand for specialties, such as Elbows, Stove-Pipe, Coal Hods, &c. The demand for Grain Shovels and Light Chains was a little better also than the week previous. In Shelf Hardware there is little doing. Cutlery shows some signs of improvement, but the apathy in the whole line of business is so farreaching that an inprovement in any partic ular line is small and scarcely worth noticing Campaign Torches and Fixtures have had a good run during the last two weeks. Nightly meetings of some sort have made a profitable trade for those who have given special attention to this line, but the circumstances that benefited this class of trade have destroyed business of every other description. There is nothing to change this state of affairs for two weeks to come, with the chance of a still more quiet market be-fore election takes place. During the week there has not been any material change in price, and no change that could be made would induce retailers to buy goods that they do not need.

Barb Wire .- The situation of the Barb-Wire market is in about the same condition as it was a week ago. The failure of manufacturers to form an association to regulate the production and price has, if anything, become more certain, and connumers, realizing this fact, are less inclined to purchase Wire at present prices than they were when the matter was first spoken of. There is nothing to encourage higher prices, and for the present the market gives indica tions of weakness. Galvanized Wire is quoted at 51/6 and Painted at 41/6, without regard to quantity, while lots ranging up to carloads can be had at 1/6¢ discount these prices, and perhaps more to the best trade. Reports are in circulation that there is considerable accumulation of Wire in the hands of manufacturers, some of whom are disposed to place their stock on the market. Should they do so, there is no question but that lower prices will prevail before the season's business closes.

Nails,-Considering the condition of the market for other lines of Hardware, there is a pretty fair demand for Nails in a small way. Carload orders are difficult to secure. Buying in quantities of this size is unusual, and when orders are placed special prices are usually made. In a small way from store we continue to quote \$2.15 @ \$2.20 for Pitts-burgh and Wheeling, while there are Neils of other makes upon the market that can be had at a fraction below these figures. Many of our jobbers have on hand light stocks of Steel Nails, which vary in price according to the make. Jobbers report Riverside Nails at \$2.30, and other brands are quoted as low as \$2.20 in small lots from store

American Pig Iron.-The market during the week has been even more quiet than the previous one. Consumers of Pig ren uniformly proclaim that they will not until after the election, and no offer could be made on the part of the sales agent could induce them to place orders for Iron that they are not in need of. Trade under the circumstances has been very dull carload orders. An exceptional inquiry lots of 100 tons and one of 2000 tons ne to our notice within the past week. Inpiries of this character come only from such asumers as must have the Iron, and who elieve that any change which will occur prices will be of an upward tendency. nacemen, upon the other hand, claim the list used prior to the adoption of the that they are not desirous of forcing their last combination list. Discounts on Black stock upon the market, and, as a rule, will Butt-Welded Pipe, 40 % @ 45 %; Galvanized, not book orders beyond February 1, and ount 5 % less than rates agents are not more willing to make concesa general way, prices are steady. The bulk of Charcoal Iron in the market is produced by a limited number of furnaces, who are so situated that they feel certain of being reported here recently, in the absence of able to control the price for the present. Lake Superior Coke, Ohio Mixed and Standard Black Band Irons are also in good shape, and prices without change. The makers of Southern Iron are claiming higher prices for Nos, I and 2 than we quote, but, while the market is steady at these quotations, there is no doubt that No. 2 be had in abundance at quotations, and perhaps less. The limited quantity of No. 1 that is brought to this market makes quotations firm, and these are likely to be the condition of the market is likely to prevail tions in carload lots, four months: Superior Charcoal, Nos. 1, 2 and 3, \$21.50; Nos. 4, 5 and 6 at \$22; Lake Superior Coke Anthracite, No. 1, at \$21, and No. 2 at \$20.

Scotch Iron.-While the market for Scotch Iron is very quiet, prices are somewhat firmer than several weeks ago. The

seen change occurs. In this event higher prices will be obtained. We make the folowing quotations for present delivery: Summerlee, \$25.50, cash, from yard, and \$24.50 to arrive; Glengarnock, \$25.50 from yard, and \$24 to arrive.

Merchant Steel .- There is nothing new to report in the demand or character of the market for Merchant Steel. Prices continue weak and irregular, and makers seem anxious to obtain orders, making concessions when necessary in order to secure them. 'Crescent" brands are reported firm at present prices, and no further concessions are expected. Some makers claim to have enough orders on hand to keep them running for several months, while there are others who are only running on part time. We continue the following quotations for best refined

	Per pound.
Best Refined Cast Tool Steel	814 @ 9340
Crucible Cast Machinery Steel	516 @ tie
Open-Hearth and Bessemer Steel	8 @ 8160
Open-Hearth Spring Steel	Blig Go. Hille
Foe-Calk Steel	812 @ 812e
Fire-Box and Boiler Steel	434 € 5 €
Syndicate Steel	7 @ 7360

Steel Rails .- The demand in this market during the past week has been very light. For such inquiries as have been made \$29 @ \$30 is given as a fair quotation, though it is possible that this quotation would be only nominal if an opportunity were offered to secure a good round lot. The unsettled condition of the market excludes all transactions that can be deferred. Makers are of the opinion that some large orders will be placed as soon as these conditions are more favorable and the political excitement has passed away.

Old Rails .- Old Rails are rather scarce in this market at present. Railroads and brokers that have them are holding for higher prices, and are asking about \$19 79 ton. Mills are quoting \$17.50 @ \$18, according to point of delivery and quantity. Several sales of small lots have been reported during the past week at these figures.

Structural Iron.-The market for Structural Iron seems to be at a standstill. There have been no new orders during the week, and there is not likely to be for several weeks to come. The demand from store has fallen off very materially, and the only class of trade in prospect would be under special contract. We continue the following quotations, with 1/4 @ 1/2 added for delivery from stock: Beams, \$3.60; Channels, \$3.60; T Iron, \$3; Angle Iron, \$2.50; Flitch Plates, \$2.50; Frieze Plates, \$2.70.

Bar Iron -The market for Bar Iron during the past week was very quiet. We continue to quote Best Refined New Puddled, \$1.85 @ \$1.90 in a small way, while concessions of 5¢ @ 10¢ are made on desirable orders. Common Iron is still quoted at \$1.70 @ \$1.80 from store, while prices from mill are irreg-ular and weak. Some of the Bar, Plate and Hoop mills report that they are well supplied with orders, and are not anxious to book further contracts at prices now prevailing. One or two out of the number have stated that they are refusing orders at cash prices, because they are of the opinion that they will obtain better figures before their present stock of orders is exhausted.

Norway Bars -We continue to quote Merchant trade \$3.75 for small to medium-sized lots. Good-sized orders would likely be accepted at a fraction less. The 4¢ rate to consumers is unchanged.

Galvanized Iron.—Jobbers and dealers in Galvanized Iron report an exceedingly light trade for the week, and, so far as we can learn, there has been no change in quotations, which are as follows: Juniata, 55 % off; Charcoal, 57 % off, and Refined, 60 % off.

Black Sheets.-The makers of Black Sheets report better trade during the week than for several weeks past. The demand is continue weak, and jobbers are supplied by mills at figures which would not have been accepted a month ago. Jobbers are pretty well supplied for the winter's trade, and makers are finding some difficulty in disposing of their stock. Jobbers report light trade from store at the following quotations: Nos. 10 to 14 at \$2.60 @ \$2.70; No. 16, \$2.80; No. 24 at \$2.80; Nos. 25 and 26 at \$2.90, and No. 27 at \$3.

Old Wheels -There has been no demand for Old Wheels during the past week. The prices asked by those who have them and those offered by purchasers are so widely different that transactions are almost out of the question. Now and then when a foundryman needs a few for a special purpose he effects a sale by conceding to the demands of the holders, which are from \$18 to \$19. Prices quoted by foundries range from \$17 to\$17.50

Scrap Iron .- Mills report that Scraps are offered them from every section of the country. Stocks have been piled up to an extraordinary extent in the yards of dealers, and in every direction the market gives evidence of more than can be disposed of. Mills are quoting \$15 @ \$16 for No. 1, and \$10.50 @ \$11 for No 2. We make the following quotations as dealers' purchasing prices : No. 1 Wrought Scrap, il net ton, \$14.50; Cast Scrap, P net ton, \$12; No. 1 Stove-Plate Scrap, P net ton, \$8; Wrought Turnings, \$\partial \tan, \$8; Cast-Iron Borings, \$6; stocks in this market are very light, and dealers have decided not to import a further Locomotive Steel Tire, \$\circ\) net ton, \$13; supply before next spring. What is on hand Buggy Springs, in net ton, \$14.50; Malleable will be amply sufficient, unless some unfore- Scrap, \$5.

EVERETT & Post, 156 Lake street, Chicago, report to us as follows, under date of October 27, 1884: Pig Lead, acting in sympathy with other Metals, has ruled very quiet and dull The few transactions, say 400 tons, have been at and around \$3 45 and \$3.50. Consumers are taking Lead only as their immediate wants require. Refined Lead is in fair demand, and in most instances held at 31/2 . We look for no improvement until after election.

Cincinnati.

OCTOBER 27, 1884.-Pig Iron.-Some increase in the small orders for immediate uses gives evidence of a little more activity in the foundries, and they are all confining themselves to filling orders already booked and Cl payment for them provided. It is reported | Cu that none of the foundries or machine shops are working on goods for the open market. Quotations remain as before:

CHARCOAL FOUNDRY		
Hanging Rock No. 1	201 10 0	
Hanging Rock, No. 2.	20,50 68	
Tennessee and Alabama, No. 1	19.00 @	
Tennessee and Alabama, No 2	18.00 @	
Lake Superior, No 1	22.00 @	
Lake Superior, No. 2	22.50 @	
CORE FOUNDRY.		
Hanging Rock, No. 1.	19.50 @	
Hanging Rock, No. 2.	18.00 @	
virginia, Alabama and Tennessee	20100 (6)	
No. 1 Virginia, Alabama and Tennessee,	18.00 @	
Virginia, Alabama and Tennessee,	49	
No. 2	17.00 @	
Eastern Ohio and Pennsylvania,		
No. 1	19.50 @	
No. 1 Eastern Ohio and Pennsylvania,		
No. 2	18.50 @	
SILVER GRAY SOFTENES	18.	
Jackson County, No. 1	19.25 @	
Jackson County, No. 2	17.75 @	
Others	15.50 @	17.50
		21100
FORGE.		
Stonecoal, Coke and Charcoal	15,50 @	20.00
CAR WHEEL.		
	00.00	
Cold-Blast Hanging Rock	27.00 @	29.00
Warm-Blast Hanging Rock Warm-Blast Alabama	21.00 @	23.00
Warm-Blast Lake Superior	24.00 @	26.00
M	22.00 @	24.00
No sales of Scrap, Rails of	r Wheel	s re-
ported.		

Louisville.

W. B. BELKNAP & Co., Iron and Steel Merchants, Nos. 115 to 121 West Main street, Merchants, Nos. 115 to 121 West Main street, Louisville, under date of October 27, 1884, report as follows: Bars are still slow. The seasonable frosty weather has brought on a better demand for general assortments, and the aggregate sales are not bad, though the movement is far from brisk. Mills are maintaining prices steadily, and some now closed down offer to start up if customers will supply them with orders at about \$2 \frac{32}{2}\$ ton advance over what they were asking ton advance over what they were asking last summer. Some manufacturers claim that orders are heavier, but they were those who are elated over the Ohio election. Sheets.—There is some improvement in the light gauges. Most of the jobbers, demoralized by cuts in other markets, sold off their surplus stocks. ized by cuts in other markets, sold off their surplus stocks, so there are no large lots pressing on the market, and mills are very firm at present prices. Heavy gauges, as noted before, have changed but little for several months. Steel.—The highest grades of Tool Steel are dull, showing lack of new work. Agricultural Steels are now in request, and Plow Slabs and Shapes are beginning to be sought by the merchant trade. Nails.—There is still a lively contest between Iron and Steel for favor with the trade. It is price against a claimed extra tween Iron and Steel for favor with the trade. It is price against a claimed extra quality. There come in every now and then complaints of the heads flying off the best brands even of Steel Nails, and our own experience corroborates this to some extent, but the factories always claim each to be of their earliest make, and assure us that such ready decanitation is not possible now. decapitation is not possible now. Wire.—
The burning out of the Southern Wire Company, at St. Louis, has stiffened temporarily the views of some of the manufacturers, but the lack of demand will not be overcome by

such disasters.
General trade is rather good, though the impending election hangs as a cloud over legitimate business. The feeling is wide-spread that the Presidential term should be extended to six, or even eight, years.

GEO. H. HULL & Co., Commission Merchants, report to us as follows, under date of October 27, 1884: The market continues quiet and firm, but sales are not so large for the corresponding period of last month. We quote, for eash, in round lots, as below:

Southern Coke, No. 1 Foundry	-		
No. 2 "	\$17.75 16.00	9	\$18.00
Hanging Rock Coke, No. 1 Foun-	20.00		10.00
dry	18.00	6	18.50
Hanging Bock Charcoal, No. 1		-	-
Foundry	21.50	60	20.00
Southern Charcoal, No. 1 Foundry	18.50	ā	19,00
Silver Gray, different grades	16.00 (a	17.00
Southern Coke, No. 1 Mill, Neutral.	14.75 (a	15.00
" No. 2 " "	14.00 (ā	14.25
" No. 1 " Cold-sh't.	14.00 (ā	14.50
Southern Charcoal, No. 1 Mill	16.50	à	18.00
White and Mottled, different grades Southern Car-Wheel, standard	13.00	ā	18.50
brands	25.00 (2	26,00
Southern Car-Wheel, other brands.	22.00 G	2	24,00
Hanging Rock, Cold-blast Warm-blast	25.00 6	à	26.00
Warm-blast	21.00 6	à	22,00

St. Louis.

and some Iron moving. Makers are accepting present prices for forward delivery, and quite a number of consumers are making such contracts. The business may be sum-Makers are acmarized as quiet, but with less uncertainty than we have been able to report for the last

six months:	NAME OF TAXABLE PARTY.	١.
HOT BLAST CHARCOAL IRO	rs.	ŀ
Missouri Southern Ohio	16.00 @ 17.00	1
COAL AND COME TRONS.		
Minsouri	16.00 @ 17.00 18.00 @ 19.00 20.00 @ 22.00	-
	40.00 - 40.00	4
Red-short	15.50 (3. 16.00	1
CAR WHEEL AND MALLEABLE :	TRONG.	1
Southern. Ohio	15.00 @ 20.00 25.00 @ 27.00 23.00 @ 30.00	SA CA
	WO.UU T	-8

Imports and Exports IMPORTS.

The following were the Imports of Hard ware, Iron, Steel and Metals into the Port of New York for the week ending Oct. 27, 1884

manuscare.	Crocker Bros.
	Pig, tons, 1220
llen Arthur,	Fire irons, cks., 67
Case, 1	Spiegel, tons, 24816
llexandre F. & Sons,	Dickerson, Van Dusen &
Nails, pkgs., 20	Co.
Baker, Pratt & Co.	Tin plates, bxs., 705
Cases, 4	Lillienberg, N.
loker Hermann & Co.	Pig, tons, 301
Cutlery, hdw. and	Bars, 2166
guns, pkgs., 56	Lundberg Gust.
rown Bros. & Co.	Bars, 10,835
Cases, 10	Lum W. H.
erbecker J. & Co.	Wheels, cks., 4
Cases, 14	Naylor & Co.
loutillier Le & Co.	
Cases, ?	Pig, lot, 1 Pierson & Co.
lark G. A. & Bros.	
Machinery, cs., 870	Sheets, bdls., 439
urley J. & Bro.	Pig, tons, 5
Cutlery on 9	Screw wire rods,
Cutlery, cs., 3	coils, 1015
avies, Turner & Co.	Stetson Geo. W.
Cases, 8	Pig, tons, 100
eeley R. & Co.	Williamson Jas. & Co.
Machinery, box, 1	Pig, tons, 100
rexel, Morgan & Co.	Order.
Cases, 11	Pig, tons. 800
aton E. W.	Cotton ties, bdls5822
Mach'y, sections, 12	Sheets, packs, 1900
Machinery, pkgs., 7	Wire rods, coils, 818
ield Alfred & Co.	Spiegel, tons, 180
Cases, 7	Wire rds., tons, 400
Guns, cs., 3	Rods, coils, 17,928
Casks, 4	Wire, pkgs., 580
olsom H. & D.	Wire rods, pkgs., 401
Guns, cs., 15	Manag

	Guus, Cs., o	Rods, cons, 17,935
	Casks, 4	Wire, pkgs., 580
	Folsom H. & D.	Wire rods, pkgs.,
	Guns, cs., 15	
	Gerdan Otto,	Steel.
	Mdse., cs., 5	Boker C. F.
	Hdw., bdls., 124	Case, 1
	Wdw., buls., 134	Brower Wm.
	Hdw., bales, 10	Cases, 3
	Hartley, Graham & Co.,	
	Guns, cs., 14	Bdla., 96
	Graef Cutlery Co.	Coster, R. J.
	Mdse., cs., 4	Magnets, cs., 16
	Hilgie E.	Crabb Wm. & Co.
	Cask, 1	Wire, bdls., 70
	Levi Bros.	Wire, cask, 1
	Cases, 6	Dolge Alfred,
ŀ	Lawrence B. Stationery	Wire, cks., 2
ı	Co.	Lazard-Freres.
l	Cask, 1	Wire rods, pkgs.,
ı	Markt & Co.	Lydecker J. W. & Co.
l	Hdw., cs., 75	Case, 1
	McConville John & C.	Naylor & Co.,
	Package, 1	Old spring, tons, 4
	Mooma's Come T T	Scott, Thos.
	Moore's Sons J. P.	Bdls., 80
	Arms, cs., 4	
	Merchants' Disp. Co.	Standard Tool Co.
	Cases, 5	Wire, cs., 6
	Oelbermann E & Co.	Wagner W. F.

TOOLO B COURS OF L.	COLUMN TERMINE
Arms, cs., 4	Bdls., 80
lerchants' Disp. Co.	Standard Tool Co.
Cases, 5	Wire, cs., 6
Cases, o	Wagner W. F.
elbermann E & Co.	
Cases, 9	Bdls., 244
atterson Bros.	Bars, 61
Case, 1	Cases, 27
leilly J. D.	Order.
Iron beds, cs., 8	Forgings, 24
	Bands, 216
Calor Daly &	Bdls., 371
Gales,	Box, 1
Mdse., cs., 18	
Cases, 5	Rails, 2130
ellers W. B.	Bars, 62
Mdse., case, 1	Strips, cks., 20
eloup & Stromberg,	Strips, cs., 9
Corking mach., cs., 3	Cases, 23
aylor Thos.	Cks., 28
Cases, 4	Wire rods, pkgs.,
hornton J. & Co.	Metals.
Cases, 2	Daning Duce & C.
iffany Chas. L.	Baring, Bros. & Co.
Cases, 2	Plumbago, bbls.,
Mdse., cs., 2	Bruce & Cook.
om Cleff & Co.	Tin plates, bxs.,
Mdse., cs., 5	Canadian Bank of Co

6.	
	Plumbago, bbls., 356
	Bruce & Cook.
	Tin plates, bxs., 700
	Canadian Bank of Com-
er & Co.	merce.
d hdw.,	Tin plates, bxs., 468
d naw.,	Crooks R. & Co.
	Tin plates, bxs., 289
, 6	Gummey, Spering, In-
, 0	gram & Co.
1	Tin plates, bxs., 29
,	Moore's Sons J. P.
25	Cartridges, cs., 5
e. 1	Naylor & Co.
HO ₀ A	Tin plates, bxs., 742
	Phelps, Dodge & Co.
	Tin plates, bxs., 987
	Pim, Forwood & Co.
	Tin plates, bxs., 20
Sons,	Wilson's Sons John
to or some d	THE PARTY OF TAXABLE OF CAMPER

lexandre F. & Sons,	Wilson's Sons John
Bdls., 48	Zinc, pkgs, 4
eltzer & Lichtenstein.	Winter & Smillie,
Rods, coils, 558	Plumbago, bbls., 113
aring Bros. & Co.	Order.
Ore, tons, 320	Tin plates, bxs., 834
Wire rods, coils, 1174	Ingots, 50
ond, Parsons & Co.	Slabs, 2279
Pig, tons, 100	Quicksilver, bot., 20
Imports of Cutlery.	Hardware and Metal

cs., #B Ward A. Cutlery, cs.

ĺ	Pig, tons, 100	Quicksilver	, bot., 200
١	Imports of Cutlery,	Hardware and	Metals
ı	for the week ending (October 24 :	

201	Quantity.	Value
Bismuth	. 2	\$82
Brass goods		6,54
Bronzes		10,868
Chains and anchors		2,010
Clocks		22,157
Copper		2,296
Cutlery	127	31,95
Gas fixtures	. 8	1,268
Guns		18,558
Hardware	18	287
Iron, pig, tons		41,461
Iron, sheet, tons	575	82,095
Iron ore, tons		1,956
Iron cotton ties	15,483	11,699
Iron, other, tons	1,428	56,107
Lead, pigs		2,600
Machinery	08	8,804
Metal goods	247	21.60E
Nails	. 5	81
Needles	. 14	5,746
Old metal	****	56
Platina	9	7.016
Platedware		B
Percussion caps		2,136
Pins		1,061
Steel		70,900
Spelter, lbs		3,046
Reg. antimony	17	1,007
Tin, boxes	41,989	201,469
Tin, slabs, 8,190	896,495	160,211
Wire		8,486
Zinc oxide		2,590
The following is a comparis		-4

Zame Galde		410	24,000
The following is a	compa	rison with	previou
dates:		3000	
	For the week.	43 weeks of 1884.	Same time 1888
Cutlery, pkgs	127	4,468	6,89
Hardware, pkgs		9,420	98
Iron, R. R., bars Lead, pigs		82,447	10,78
Steel, pkgs	28,092	1,500,612	2,437,90
Tin, bxs	41,213	1,656,340 90,161,211	1,804,138
PY	DART	e inclusion	au, use, ask

The following were the Exports of Hard-HOFFER & Co., of St. Louis, report to us as follows, under date of October 27, 1884:
There is some little stir in the Iron market,
Makers 270 28, 1884: ware, Iron, Machinery, Metals, &c., from

Tron market,	October 28, 1884:	
kers are ac- ard delivery,	Dutch West Indies.	
rs are making	Quan. Val. Ptlm., gals3585 380	Clocks, bxs 54 700
may be sum-	Sew. ma., cs 4 62 Hdw., cs 18 220	Hamburg.
uncertainty of for the last	Nails, kegs 6 22	Hdw., cs 46 1,005 Mach'y, pkgs. 4 524
Marie Strategy	Dutch Bust Indies.	Mach'y, pkgs. 4 524 Rifles, cs 2 296
ons,	Ptlm., gals.380,000 37,866	Steam pumps, cs 14 3,686
. \$16.00 @ 17.00	Ptg. ma., pkgs 6 180	Ptlm., gals.334,520 25,800 Nails, kegs 14 36
. 16,00 @ 17,00	Hdw., cs 17 295	Clocks, pkgs 55 1,885
. 40,00 M 22,00	Bromen.	Knit. mach.es 7 1,200
. 16.00 @ 17.00	Copper, bars. 30 300	Sew. ma., cs. 833 22,775
18.00 @ 19.00	Mf. iron, pkgs. 21 1,010	Konigsberg.
20.00 ₲ 22.00	Old cop.,pkgs 16 2,260	Ptlm., gals.218,038 16,900
THE RELIGIONS	Ptlm, gals, 581,583 47,800 Ag. imp., pkgs 2 25	Liverpool.
15.50 @ 16.00	Ag. imp.,pkgs 2 25 Hdw., pkgs 10 510	Rifles, case 1 87
15.00 @ 16.00	Antwerp.	Hdw., cs 48 1,584
TRONG,	Ptlm,gals1,059,829 84,346	Eyelets, pkgs. 7 458
18.00 @ 20.00	Hdw., cs 18 300	Copper pkgs1321 29,050 Ag. lmp.,pkgs 71 2,049
25.00 @ 27.00	Copper, bbls 18 2,500	Tires 6 980
25.00 @ 30.00	Copper, pigs. 126 3,300	Saws, cs 9 248

-			_
	Quan. V	7al. Quan. Va	al
	Copper, bars. 774 14, Met.scrap.pgs 12	222 S. pumps,pgs. 2 2 590 Ptlm. gals10,500 2,13	
	Dr. Carbs, Dris. 130 12.7	590 Ptlm. gals10,500 2,13 332 Mach'y, pkgs. 968 32,3	2
	Nails, case 1	50 Hdw., pkgs 129 1.9	74
-		332 Mach'y, pkgs. 958 32,3 50 Hdw., pkgs 123 1,9 30 Pumps, pkgs 6 3 1000 Iron vats 5 13	9.
f	Clocks, pkgs., 228 5,.	COL DOMES, OB 10 AC	41
:	Clocks, pkgs. 228 5, Mach'y, pkgs. 27 2,1 Tin plate, bxs 10 1	133 Fenerueta	
	rumps, pags. 8	391 Ptim., gals25,190 2,63	50 72
		Scales, cs 2	98
6	London. Pumps, pkgs. 99 1,6	Mf. iron, pkgs 858 2,90 610 Clocks, cs 8 7	77
	Mach'v nkon 60 6.9	969 Sew ma os 91 9.01	18
5	Gongs, es 150 80,4 Clocks, cs 201 8,0	100 Revolvers, cs. 5 1,86 068 Iron safe 1 7	10
	Mf. iron, pkgs 9	85 Iron pipe, pcs. 314 1,23	18
	Saws, cs 2	89 Naus, es 17 12	
1	Cartridges, cs 250 5.13		7
1	Fort shells, cs 8 1.8	00 Cartridges.cs. 5 17	0
1	Hdw., cs 174 5,2 Ptlm., gals.712,760 68,2	275 Hdw., pkgs 31 88 221 Mach'y, pkgs. 214 8,54	
-	bew. ma. cs 175 4,5	HU Baws, case I Z	2
1		9 United States of Co-	
1	Hull.	eo meo sue.	0
1	Mach'y, pkgs. 8 48	Mf. iron, pkgs 739 3,80 85 Cutlery, pkgs. 68 1,71 86 Ag. imp., pkgs 32 76	8
- 1	Clocks, pkgs 24 29	86 Ag. imp., pkgs 32 76 00 Revolvers, cs. 9 86	8
	Mach'y, pkgs. 2 2,70 Hdw., cs 25 37	75 W. mills 2 26	
1	Great Yarmouth.	Fire arms, cs. 3 19:	
	Ptlm., gals.125,154 11,00	48 Nails, kegs 91 34	7
	Bris ot.	Br goods on 4 10s	1
1	Clocks, pkgs 4 34		
1.	Botterdam.	Lead, cwt 2 91	1
li	Copper, casks 54 8,77 Pumps, pkgs. 5 7	Lead, cwt	
1	Pumps, pkgs. 5 7 Clocks, pkgs 10 90	07 Mach'y, pkgs. 306 6,176 Sew. ma., cs. 191 5,591	1
L	Glasyon	Sew. ma., cs 191 5,591 Mf. cop., cs 5 278	
18	Cartridges,cse 1 19 Steel drills, cs. 4 85	Naus, cs 3 39	Н
11 /	Ag imp pkgs 11 83	19 Tacks on 9 16	
1	umps, pkgs. 2 7	O Clocks, cs 9 234	
8	Mach'y pkgs 30 8,42 Sew. ma., cs 311 4,94	Pumps, pkgs. 18 183	
1.5	Marie Correct O O	1 Peg press 1 550	
10	df. iron, pkgs 15 60	~ MOH, DEEB 00 2223	1
	Newfoundland. tlm., gals4250 450	Wal mak as 40 4 400	
		Wine cloth on 4 904	1
F	tailroad sup- plies, cs 18 855	Hayti.	1
N	plies, cs 13 853 ff. iron, pkgs 42 873 ew. mch., cs. 17 566	5 Ptim., gals1499 142	Į
S	ew. mch., cs. 17 566 Ingines 2 500	0	I
S	teel, bdls 4 76	g accountry ou.	ı
	New Zeatand.	Ptim., gals. 237,000 20,441 Contral America.	ı
8	aws, cs 7 234	Mr. Imam mlum 000 4 800	ı
P	g. imp., pkgs 9 139 tlm., gals. 77,481 10,670 ails, cs. 6 184	Nails, kegs 00 204	1
N	ails, cs 6 184	4 Hdw., pkgs 45 578	l
P	umps, pkgs. 3 86 cales, cs 6 65	Cartridges, cs 4 197	I
\mathbf{R}	ailroad cars. 15 43,499	g Scales, cs 6 152	I
M	Vringers, cs. 6 60 lach'y, pkgs. 44 5,739	1 Paris, CB 14 60	ŀ
23,		Iron, bdls 58 546	I
H	ff. iron, pkgs 256 1,450 dw., pkgs 264 3,909	1 K CHILL . 1200B 10,071 1,704	ı
Si	ew. ma., cs 52 300	Sew. ma., cs 49 866	ı
N	evolv'rs, cse. 1 60 ails, kegs 8 8	Br. goods, cs 2 43 Clocks, pkgs 3 46	ı
C	locks, pkgs. 15 400	Sheat'g met, cs 3 98	ı
0	utlery, case. 1 14 rollers 5 115	1 10 10 10 10 10 10 10 10 10 10 10 10 10	ı
	ritish West Indies.	Guns, cs. 9 M5	I.
H	tlm., gals8280 862	Ag. imp., pkgs 5 87 Wire, cs 32 149	
	dw., pkgs 80 420	Wire, cs 32 149 Shot, bxs 7 86	
Ch	dw., pkgs 80 420 ew. ma., cs 6 102 utlery, case. 1 9	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48	
Ch	dw., pkgs 80 420 ew. ma., cs 6 102 utlery, case. 1 9	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48 Ir. tubes, bdls 12 44 Argentine Republic.	
Ci Ci Mi Ni	dw., pkgs 80 420 w. ma., cs 6 102 utlery, case. 1 9 locks, case. 1 11 f. iron, pkgs 41 334 ails, kegs 16 54	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48 Ir. tubes, bdls 12 44 Argentine Republic.	
CI CI Mi Ni Pi	dw., pkgs 30 420 ew. ma., cs 6 162 utlery, case. 1 9 locks, case 1 11 f. iron, pkgs 41 334 alls, kegs 16 54 amps, pkgs 2 18	Wire, cs 32 149 Shot, bxs 7 86 Stoel dies 6 48 Ir. tubes, bdls 12 44 Argentine Republic. Cutlery, cs 13 248 Hdw. pkgs 76 2,005	ш
Ci Ci Mi Ni Pi	dw., pkgs 30 420 w. ma., cs 6 102 utlery, case. 1 9 ocks, case 1 11 f. iron, pkgs 41 334 ails, kegs 16 54 umps, pkgs 2 13 z.imp., pkgs 2 18	Wire, cs	1
CI MINIPANI	dw., pkgs 80 420 ww. ma., cs 6 162 ettlery, case. 1 9 ocks, case. 1 11 f. fron, pkgs 41 334 alis, kegs 16 54 mps, pkgs 2 18 g.imp., pkgs 6 98 alis, cs 15 67 ach'y, pkgs. 19 1,186	Wire, cs	1
Ci Cl Mi Ni Pi Ai Ni Mi Ca	dw., pkgs 80 420 w. ma., cs 6 102 utlery, case. 1 9 ocks, case. 1 11 f. iron, pkgs 41 334 alis, kegs 16 54 umps, pkgs. 2 18 g.imp., pkgs 6 98 g.imp., pkgs 6 98 alis, cs 15 67 ach y, pkgs. 19 1,186 uttridges, cs. 5 78	Wire, cs	1
CI MI NI PLAINI MI CI	dw., pkgs	Wire, cs	1
CI CI MI NI PLAJ NI MI CI HICCI	dw., pkgs 80 420 w. ma., cs 6 102 utlery, case. 1 9 olocks, case. 1 11 f. iron, pkgs 41 334 alls, kegs 16 54 umps, pkgs. 2 18 g.imp., pkgs 6 98 slils, cs 15 67 ach'y, pkgs. 19 1,136 artridges, cs. 5 5 British Honduras. dw., pkgo. 1 16 atlery, case. 1 26	Wire, cs	1
CI MINI NI	dw., pkgs	Wire, cs	1 1 1 1
Ci Ci Mi Ni Pi Ai Ni Mi Ci Ci Hic Ci Pt	dw., pkgs 80 420 w. ma., cs 6 102 utlery, case. 1 9 ooks, case 1 11 f. iron, pkgs 41 334 alis, kegs 16 54 mps, pkgs 2 18 g.imp., pkgs. 6 98 alis, cs 15 67 ach'y, pkgs. 19 1,136 utridges, cs. 5 75 British Hunduras. dw., pkgo 1 16 tlery, case. 1 26 New Brunswick.	Wire, cs	1
Ci Ci Mi Ni Pi Ai Ni Mi Ca He Chi Pt	dw., pkgs 00 420 w. ma., cs 6 102 utlery, case. 1 9 olocks, case. 1 11 f. iron, pkgs 41 334 alls, kegs 16 54 tmps, pkgs. 2 18 g, imp., pkgs 6 98 slits, cs 15 67 ach'y, pkgs. 19 1,136 utridges, cs. 5 75 sritish Honduras. dw., pkgo. 1 16 thery, case. 1 26 lm., gals 150 26 Nove Brunswick. lm., gals 6,650 6,675	Wire, cs	111111111111111111111111111111111111111
Ci Ci Mi Ni Pi Ai Ni Mi Ca He Chi Pt	dw., pkgs	Wire, cs	111111111111111111111111111111111111111
Ci Ci Mi Ni Ni Ni Ni Ni Mi Ci Hi Ci Pt Hi Ci Pt Hi	dw., pkgs 80 420 w. ma., cs 6 102 utlery, case. 1 9 olocks, case. 1 11 f. iron, pkgs 41 334 alis, kegs 16 54 umps, pkgs. 2 18 g.imp., pkgs 6 98 alis, cs 15 67 ach'y, pkgs. 19 1,136 artridges, cs. 5 5 British Honduras. dw., pkgo. 1 16 atlery, case. 1 26 lm., gals 150 26 w. es Brunswick. lm., gals 6,650 6,875 iw., cs 2 33 Neva Beotts. Liron, pkgs 50 265	Wire, cs	111111111111111111111111111111111111111
Ci Ci Mi Ni Pi Ai Ni Mi Ci Ci Ci Pt Hic Ci	dw., pkgs. 30 420 w. ma., cs. 6 102 utlery, case. 1 9 locks, case. 1 9 locks, case. 1 11 f. iron, pkgs 41 334 alis, kegs 16 54 mps, pkgs. 2 18 g.imp, pkgs. 6 98 alis, cs 15 68 alis, cs 15 67 sch'y, pkgs. 19 1,136 utridges,cs. 5 75 sritish Honduras. dw., pkgc. 1 16 tlery, case. 1 26 llm., gals 150 26 New Brunswick. lm., gals 6,650 6,875 Neva Scotia. ', iron, pkgs 50 265 coks, cs 2 25	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 43 Ir. tubes, bdls 12 44 Argeatine Republic. Cutlery, cs 13 248 Hdw., pkgs 76 2,005 Ag. imp., pkgs 945 1,896 Brakes, pkgs 15 835 Mach'y, pkgs. 90 463 Cartridges, cs 17 402 Mach'y, case. 1 180 Scales, cs 13 167 Mf. iron, pkgs 34 286 Pumps, pkgs. 7 110 Clocks, cs 4 115 Guns, cs 2 375 Pstm., gals. 470,760 43,830 Arabia. Ptlm., gals. 433,140 38,500 St. Pierre (Mique-	111111111111111111111111111111111111111
Ci Ci Mi Ni Pi Ai Ni Mi Ci Ci Ci Pt Pt Ci	dw., pkgs	Wire, cs	111111111111111111111111111111111111111
Ci Ci Mi Ni Pi Ai Ni Mi Ci Ci Ci Pt Hic Ci Ci Hic Pt Hic Ci Ci Hic Pt Hic Ci	dw., pkgs	Wire, cs	THE POPULATION OF THE PERSON O
Ci Ci Mi Ni Pi Ai Ni Mi Ci Ci Ci Pt Hc Ci Ci Hc Ci Pt Hc Ci Ci Hc Pt Hc Ci Ci Ci Pt Hc Ci	dw., pkgs 00 420 w. ma., cs. 6 102 utlery, case. 1 9 olocis, case. 1 11 f. iron, pkgs 41 334 alis, kegs 16 54 imps, pkgs. 2 18 g.imp., pkgs 6 98 slis, cs 15 67 ach y, pkgs. 19 1,186 utridges, cs. 5 75 rétich Honduras. dw., pkge. 1 16 utlery, case. 1 26 im., gals 150 26 Neve Brunswick. im., gals 66,650 6,873 iw., cs 2 23 Neva Bootia. d. iron, pkgs. 2 64 im., gals 14,333 1,454 im., gals 14,333 1,454 im., gals. 798,530 78,000 Hawre.	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48 Ir. tubes, bdls 12 44 Argeatine Republic. Cutlery, cs 13 248 Hdw., pkgs 76 2,005 Ag. imp., pkgs 945 1,896 Brakes, pkgs 15 835 Mach'y, pkgs 94 463 Cartridges, cs 17 402 Mach'y, case 180 Scales, cs 13 167 Mf. iron, pkgs 34 286 Pumps, pkgs 115 Guns, cs 2 375 Ptlm., gals. 470,760 43,530 Arabia. Ptlm., gals. 433,140 38,500 St. Pierre (Mique- lon.) Mf. iron, pkgs 20 200 French Possessions	111111111111111111111111111111111111111
CI CI MINI NI MINI NI MINI CI	dw., pkgs 80 420 w. ma., cs. 6 102 utlery, case. 1 9 locks, case. 1 9 locks, case. 1 9 f. iron, pkgs 41 334 alis, kegs 16 54 mps, pkgs. 2 18 g, imp., pkgs. 6 98 alis, cs 15 67 ach y, pkgs. 19 1,186 utridges, cs. 5 7 sritish Honduras. dw., pkge. 1 16 attery, case. 1 26 lm., gals 150 26 Nove Brunsveick. lm., gals 6,650 6,875 lw., cs 2 33 Nova Hootia. f. iron, pkgs 50 265 coks, cs 2 25 lw., pkgs 2 64 lm., gals. 14,333 1,454 **tish Eart Induse. lm., gals. 78,630 78,600 Haeve. utriliges, cs. 4 678	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48 Ir. tubes, bdls 12 44 Argeatine Republic. Cutlery, cs 13 248 Hdw., pkgs 76 2,005 Ag. imp., pkgs 945 1,896 Brakes, pkgs 15 835 Mach'y, pkgs 94 463 Cartridges, cs 17 402 Mach'y, case 180 Scales, cs 13 167 Mf. iron, pkgs 34 286 Pumps, pkgs 115 Guns, cs 2 375 Ptlm., gals. 470,760 43,530 Arabia. Ptlm., gals. 433,140 38,500 St. Pierre (Mique- lon.) Mf. iron, pkgs 20 200 French Possessions	I I I I I I I I I I I I I I I I I I I
CI MINITER NE NI MINITER NI MINITER NE NI MINITER NI MINITER NE NI MINITER NI	dw., pkgs 30 420 w. ma., cs 6 102 utlery, case. 1 9 locks, case. 1 19 locks, case. 1 9 l. iron, pkgs 41 334 alis, kegs 16 54 mps, pkgs 2 18 g.imp., pkgs. 6 98 alis, cs 15 67 ach y, pkgs 19 1,196 utridges, cs. 5 57 sritish Honduras. dw., pkgs 1 16 thery, case. 1 26 lm., gals 150 26 Nove Brunsuciok. lm., gals 150 36 Nove Brunsuciok. lm., gals 2 33 Nova Bootia iron. pkgs 2 65 lw., pkgs 2 67 lw., gals 14,333 1,454 **tish Eart India-** ltm., gals 186,337 78,500 drills, cs. 4 678 pper, casks 224 36,400 ndrils, cs. 4 678 pper, casks 224 36,400 ndrils, cs. 4 150	Wire, cs 32 149 Shot, bxs 7 86 Steel dies 6 48 Ir. tubes, bdls 12 44 Argeatine Republic. Cutlery, cs 13 248 Hdw., pkgs 76 2,005 Ag. imp., pkgs 93 15 835 Mach'y, pkgs. 15 835 Mach'y, pkgs. 19 463 Cartridges, cs. 17 402 Mach'y, case. 1 160 Scales, cs 13 167 Mf. iron, pkgs 34 289 Pumps, pkgs. 110 Clocks, cs 4 115 Guns, cs 2 375 Patras Ptlm., gals. 470,760 43,550 Arabia. Ptlm., gals. 433,140 38,500 St. Pierre (Miquelon.) Mf. iron, pkgs 20 200 French Possessions in Africa. Clocks, cs 4 75 Ptlm., gals 3000 285 French West Indies.	111111111111111111111111111111111111111
CI MINITER NE NI MINITER NI MINITER NE NI MINITER NI MINITER NE NI MINITER NI	dw., pkgs 30 420 w. ma., cs 6 102 utlery, case. 1 9 locks, case. 1 19 locks, case. 1 9 l. iron, pkgs 41 334 alis, kegs 16 54 mps, pkgs 2 18 g.imp., pkgs. 6 98 alis, cs 15 67 ach y, pkgs 19 1,196 utridges, cs. 5 57 sritish Honduras. dw., pkgs 1 16 thery, case. 1 26 lm., gals 150 26 Nove Brunsuciok. lm., gals 150 36 Nove Brunsuciok. lm., gals 2 33 Nova Bootia iron. pkgs 2 65 lw., pkgs 2 67 lw., gals 14,333 1,454 **tish Eart India-** ltm., gals 186,337 78,500 drills, cs. 4 678 pper, casks 224 36,400 ndrils, cs. 4 678 pper, casks 224 36,400 ndrils, cs. 4 150	Wire, cs	111111111111111111111111111111111111111
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WASHINGTON NEWS.

(From Our Regular Correspondent.)

WASHINGTON, D. C., October 28, 1864 The acting commissioner of patents, Mr. Dyrenforth, has rendered a decision which it a expected will go far to prevent the per version of patents into monopolies and correct growing abuses. It is also especially important at this time, when there is so much outcry against an essentially admirable sys-There is no doubt that abuses will creep into the best of systems. It appears that a practice had prevailed in the Patent Office, or had been revived, of allowing applications to be patented with limited claims upon some specific device, and at any time thereafter to allow the same inventor to obtain a subsequent patent, using the device already patented as a mere exponent of the genus, the subsequent patent making generic claims—that is, claims broad enough to include the claim of the previous patent. An illustration of the pernicious-ness of this practice might be presented by way of illustration in the type-writer. Suppose that the inventor of that machine were to embody in one application for a patent all the instrumentalities and aggroupments necessary to make up the dependent source or from a divisional application.

several well-known engineering pocket-books, and, while not quite so extensive, is changes upon them all, and thus including in 7. The description of an invention by a scarcely less valuable in its line.

the aggroupments that which constitutes the patented first, that patent would be subervient to the patent issued later upon the roller alone. It seems absurd to allow an inventor to make application and obtain a patent for some trifling improvement, and then come in at any time thereafter and claim another patent covering that already described in the first patent, so that the first patent would become tutelary to the second, and the unlucky purchaser of the first would become an infringer of the second in the hands of his grantor. It has been

vention for 34 years.

The abuse is fully described and elaborately illustrated in Acting Commissioner Dyrenforth's decision in the case ex parte Holt. This decision also deals with other abuses, such as splitting patents into small particles, thus harrassing the public. The following syllabus of the Holt case will sufficiently set

forth the principles enunciated and the abuses proposed to be corrected:

1. Applications for letters patent are to be divided only upon lines drawn between separable and distinct parts of the thing invented. No invention can be divided upon an imaginary line one determined by a prore an imaginary line, one determined by a mer-difference in words, as by the relative breadth of claims to identical subject matter; that is, upon a distinction of scope, not of substance—of the mind, not of matter. Divisional applications which relate to the same machine or structure, and contain claims to the constituent parts thereof which interweave with each other, or overlap one

another, are improper.

2. An interference cannot be declared with

an improper divisional application.

3. When a person invents the subject matter of a narrow claim upon a certain entity, in the same moment of time and as the same sense-concept, he invents that of a broader claim thereon; hence a second pat-ent to him with claim to subject matter which comprehends the claim of his previous patent is void as being anticipated in such

patent is void as being anticipated in such previous patent, and so the allowance of applications with claims to specific devices or "species," while an application containing a "generic" claim covering those species is in controversy or withheld, is condemned.

4. If properly divided out, it is permissible to claim in an application matter which is shown and described, but not claimed, in a patent to the same applicant, provided the application upon which the patent was granted was concurrently pending, as pointed out in ex parte Derby (26 O. G., 1208); but where the subject matter is one, integral and indivisible, the mere fact that the applications were simultaneously before the office cations were simultaneously before the office will not warrant the granting of more than

one patent thereupon. 5. The case here on appeal is one in which there could be no proper division, but even in cases where there can be proper division, if the divisions, when put together, constitute an organized machine, depending for its tute an organized machine, depending for its operation as such upon each of the distinct and separate divisions, it seems only proper that all the divisions should be pending concurrently, and should issue simultaneously, analogous to divisions of a reissue, in order that, through the interdependence of the parts, by withholding from patent until much later an essential part, or a sub-aggroupment of parts, or by patenting the separate parts or sub-aggroupments of the separate parts or sub-aggroupments of parts, seriatim, at long intervals, the term of machine, or be a menace against such right, process and product, machine and product and machine and method. Of course, where the product can only be made by one pro-cess, the two are so linked together that the invention is one, and there can be no divsison; but where the product is capable of being effected by various methods, processes or machines, and division is thus possible, where the process or the machine would produce no other product, the method, process or machine should not be allowed to go to patent before the product, and the product be subsequently patented, as in such case the public may seem to be barred from the use of the method or process or of the machine, even after the patent upon the same has expired, for the reason that there can-not be such use without making the product. Proper division between process and product, divisions between machine and product and between machine and method, should issue simultaneously. If the patent for the process or for the machine issue first, a subsequent patent upon the product should be refused, and in the case of machine and method, if a patent on the machine issue first a subsequent patent on the method should be refused, all upon the ground that it would seem to ex-

Office has done all that is required, the applicant having received all that a single fee will cover. He may not shift from one state matter, whether it be from an entirely in-dependent source or from a divisional appli-

tend the monopoly, and is thus against public

specification alone is not now, as formerly, type bearing levers must strike, but also the key and gauge of the machine, it is that which makes it operative. Now suppose, in another application, the same inventor makes a claim broadly for the reller alone. If the specific machine, including the roller, in an aggroupment of instance. constructing and using the same. The aim, the end, the purpose of the claim is to point out particularly and distinctly define the invention to be secured to the individual. The claim is the measure of the patent, and the day has passed when the courts will search through the specification for information which it is the very office of the claim to

impart.
8. Such expressions as "means" and "mechanism" are generally objectionable as being indefinite. They are objectionable as employed in this case. They are always ob-jectionable if, by their use, the claim itself in the hands of his grantor. It has been suggested that if the second application were pending together or simultaneously with the first, and notice were inserted in the first case that the broad claim was in the second, this would modify the matter. But it is perfectly apparent that this makes no difference whatever. A person having two or more applications pending, upon the most limited of which a patent was granted, about the time the first expires, he might get another patent with the broader claim, and so ad inventor might have a monopoly of his invention for 34 years.

jectionable if, by their use, the claim itself does not distinguish what is believed to be new. But it is not intended to intimate that any particular expression or form of words is to be excluded from a claim—that, for example, such expressions as "means" and "mechanism" may never be employed On the contrary, if these words, coupled with the requisite words of qualification, ever express the exact invention, or refer to merely adjunctive devices readily understood, they are not objectionable. Comprehensive terms and phrases to include mechanical equivalents are quite proper (see ex parte Demming, 26 O. G., 1207) if they are clear—that lents are quite proper (see ex parte Demming, 26 O. G., 1207) if they are clear—that is, provided they distinctly express the invention and are warranted by the specification.

o. Every instrumentality or substance intended to be an element or ingredient of a claim must be directly brought in as such, not inferentially included, or only alluded to

in naming some other.

10. It is to be observed that claims forming part of one case cannot be to alternative constructions—that is, alternative with other claims to constructions; in other words, which are modifications of constructions set up in other claims; nor may claims be in themselves alternative. II. Each claim must be to a complete and

perative combination in the direction of the

12. In an original application matter not warranted by the case, as first filed, should not be designated by the term "new matter." The term "new matter" is employed in the statute and in the "Rules of Practice" only with reference to reissues

SENATOR MORRILL'S RE-ELECTION.

The re-election of Justin S. Morrill for a fourth term as United States Senator from Vermont is received here with great satisfaction. From the very beginning of his public career in the Lower House of Conpublic career in the Lower House of Congress, as far back as 1855, he has been identified with the interests of American industry. The tariff act reported by Mr Morrill, from the Committee on Ways and Means, in March, 1860, and which passed the House of Representatives in May following, and the Senate in February, 1861, was approved by President Suchanan on March approved by President Buchanan on March 2, or just two days before the expiration of his term of office. This act was in the in-terests of the industries of the country, paraterests of the industries of the country, paralyzed by the ruinous provisions of the act of March 3, 1857. So pressing were the necessities of the country for relief that the act was made operative on April 1. Since that time, in the preparation and discussion of all the tariff acts Mr. Morrill has taken a conspicuous part. This distinguished statesman, who has been again honored by his fellow-citizens of Vermont, is far advanced in years, but is in vigorous health, and with the care he takes of hinself there seems to be no occasion for anxiety that he will not compass the period of his new term.

NEW PUBLICATIONS.

THE IBON AND STEEL WORKS OF THE UNITED STATES, 1884. Size, 8½ x 6 inches; 202 pages. Prepared and published by the American fron and Steel Association. Price, \$5.

The present issue, which is the seventh

edition of the Directory of the Iron and Steel Works of the United States, has been revised up to September 1 of the present year. The first two chapters entitled respectpatent protection, of exclusive right to the lively Blast Furnaces, and Rolling Mills machine, may not be extended, or seem to and Steel Works, classify the furnaces and be extended, beyond that limited by law, and deprive the public of right to the brief account of them, including the date of erection, the size and capacity of the plant, after the first patent has expired. The the general method of operation, and a list same considerations obtain with respect to of the present officers of the company. Next come a number of short chapters, as follows: Abandoned Rolling Mills, Abandoned Steel Works, Rail Mills, Nail Mills ssemer Steel Works, Crucible Cast-Steel Works, Open-Hearth Steel Works, Steel Manipulating Works, and Miscellaneous Steel Works. Following these is a directory of the forges and bloomaries, with a list of those which have been recently abandoned. The book closes with a couple of chapters on Wire Drawers and Wire-Rod Mills, and Car Axle Manufacturers. It is hardly necessary to add that the contents are excellently arranged, and comprise most valuable information of a statistical character. For a more extended account of this directory we would refer our readers to our editorial columns of this issue.

Ingenieur Kalender für Maschinen und Hütten Techniker, 1885. By P. Stühlen.. Size 3½ x 6 inches, 155 pages. Published by G. D. Baedeker, Essen, Germany.

Mr. P. Stühlen's little volume, which has come to us regularly for a number of years past, and each time with some valuable addition and improvement in appearance, has again been enlarged, and the edition now before us will unquestionably favorably commend itself, especially to the German engineer and machinist. policy.

6. When an application is once filed, be it a divisional or other original application, it presents a certain state of facts, and when a carefully revised, and additions have been carefully revised, and additions have been carefully revised, and additions have been made in almost all cases, the general arrangecant having received all that a single fee will cover. He may not shift from one state of facts to another and draw in extraneous matter, whether it be from an entirely independent course or form a divisional application.

Trade Report.

General Hardware.

The engrossing interest which is taken this week in political affairs interferes seriously with the transaction of business, the volume of which has largely fallen off, leaving the market in a state of comparative stagnation. In this condition of affairs alterations in price are not to be expected, the market in this respect remaining, except as noted below, substantially as at our last re-

STEEL GOODS.

A meeting of the manufacturers of Steel Rakes, with a view to so amend the discount as to protect the interests of the union against those of outside makers. The subject was thoroughly discussed by the members present and considerable correspondence was read before the meeting, all of which went to prove beyond a doubt that offers had been freely made, especially in the West and South, by outside parties, not only on Rakes, but also on Hoes and Forks, at very much below union prices, and the opinion seemed to prevail generally among those present that the interests of the union could best be protected by a reduction in the price of all goods named in the standard list. As the expression of this opinion the union, by unanimous action, increased the discount on all Steel Goods named in the standard list to 60 per cent. minimum, instead of 50 and 10, as before, and making 60 and 10 per cent. the maximum, instead of 60 per cent., as before. We have heard some expressions of regret from the trade that it was thought necessary to make this reduction in price, and some have expressed the opinion that in making it the union was unduly influenced by an apprehension of outside competition, which, in the judgment of the parties to whom we refer, was not sufficiently extensive to necessitate this change of price. To this question there are, however, two sides. The manufacturers of this line of goods were doubtless fully advised as to the facts in the case, and adopted a course of action similar to that which so many associations before them have followed in order to repress outside competition. It would be, doubtless, more for the interest of the manufacturers and the trade at large to have the present prices maintained than to have the higher figures nominally retained and then have the union go to pieces and prices become thoroughly demoralized.

In addition to this action regarding prices and other business connected therewith, resolutions were adopted modifying slightly the rules of the association with reference to

the delivery of goods.

We have heard from a number of manufacturers whose views have been of service to us in preparing this statement of the causes which led to the recent reduction in the prices of these goods. Nearly all refer to the change made as having been unques tionably the best, and a number of them indicate that there is a fair possibility that prices may later in the season be advanced to a higher figure. It is generally considered that the stability of the association is reasonably assured as a result of the action which has been taken, while fears have been freely expressed that if the price had been maintained where it was first fixed there would have been a break sooner or later.

In regard to this reduction one of the manufacturers writes us, referring to their action as making the margin between the prices of union manufacturers and those outside so small that union goods will be sold in preference to outside goods, and expressing o opinion that prices will be maintaine until they are advanced. Another concern informs us that it was thought advisable to put the price where there was not so much chance for outside parties to operate, and expressing the opinion that this price will be adhered to, as outside parties cannot undersell it without drawing on their sur-Another house describes the situation in this way: "The recent action of the Steel Goods Association was caused by the cutting of the combination prices by parties outside of the association. There has been among the members a firm adherence to the We tried the experiment by making a fair price, hoping to have it maintained. It was no sooner made than it was cut by outside makers. The present quotation leaves but a nominal margin to cut from, and the association felt that it would be better to sacrifice their profits to enable the manufacturers to maintain their price with a fair prospect of keeping their trade.

But, as giving a view of the market from the standpoint of a leading manufacturer, we lay before our readers the following extract from a communication relative to the reduction, of which we are just in receipt :

I favored the recent action of the Steel Goods union, and, consequently, I approve it. I felt that in view of the general depression in business, declines in prices and the quotation on these goods by a few agents of makers outside the union, we should stand on more solid ground to put union prices down pretty near to cost. With a capacity down pretty near to cost. With a capacity to produce these goods fully up to the country's demands, I did not think it policy for the union to promote the increase of outside for use on account of sand holes, hard spots factories. Yielding to the "times" and and unevenness of grit. The manufacturers

the state of markets now, I believed we should stand in better shape to continue the union in the future, and avail ourselves of hoped-for improvement in prices and business, than if we had held to the prices of the August meeting. In short, I thought the union should do as an individual would -go down when markets are down and up when the markets go up. Striking out the points of delivery on the Missouri River, I think to be a matter of simple justice to ourselves as manufacturers and to the jobbers at large, and look to see it secure a good-will toward and co-operation with the union from important quarters where the opposite disposition before existed. I think the Hoe and Fork Makers' union is to day strong within itself, strong in the respect and confidence of the trade, and strong against all outside competition.

There is no improvement in the demand for Carriage and Machine Bolts, and, while Goods was held in Buffalo last week, the the price for the best makes is pretty well primary object of which was to consider the maintained, the price for the common Bolts question of Steel and Malleable Garden is so low that there can be but a narrow margin of profit to the manufacturers. Low quotations are undoubtedly made, but manufacturers are probably learning that low prices do not increase the consumption of goods.

> The Association of the Manufacturers of Norway Iron Carriage and Tire Bolts have, we are informed, made a pool, the details of the arrangements not being made public, by which they expect to maintain the prices which they have determined for Norway Carriage Bolts. The association is said to embrace every manufacturer of Norway Carriage Bolts, large or small, in the country, and the discount from the new revised list, which we published last week, may be named as 75 per cent.

> Russell, Burdsall & Ward, Portchester, N. Y., have adopted, as we announced last week, the new revised list on Tire Bolts, but they still retain their former list on Carriage Bolts, their judgment being that it is the best Carriage Bolt list before the trade.

> > NAILS.

There is but little change to note in the ondition of the Nail trade. In most instances dealers report a steady continuance of the demand that has been noted for some time, with possibly an exception here and there in the direction of decreased business. movement, however, is very fair in the aggregate, and exceeds the expectations of the members of the trade, who have latterly been anticipating a cessation of activity. The most important feature that has come to our knowledge this week is the reported canceling of contracts by a company which has been an active seller at low rates, the cancellation being due to a strike among their puddlers. The orders which they had taken have been placed among other parties in this vicinity, with the result of an unexpected demand for several thousand kegs beyond the ordinary requirements of the local trade. The export trade continues in tolerably good shape, small orders being quite numerous, with occasionally a call for a considerable quantity. Prices are steady on the basis of the quotations made last week, namely, \$2.10 to \$2.20 from New York store, the majority of sales being at We learn that several Eastern \$2.15. parties are experimenting with purchased Steel, with a view to turning their attention to Steel Nails in case the experiments prove satisfactory. No hope is entertained at present that Steel Nails can be manufactured cheaply enough to sell them for the same price as Iron Nails. This will be the case at probably no distant date, but thus far there is a difference in cost which has not been overcome.

BARBED WIRE.

Nothing has occurred to change the condition of dullness noted under this head last week. A few sales have been made, it is we are advised, have under way 50 new true, but they have not been sufficient to im- Threaders, which, with their machinery in part any appearance of activity to the trade. process of manufacture, will increase their The weakness of prices continues. Some of capacity to nearly 8000 gross per day. They the sales made during the week have been are thus energetically prosecuting the manusubject to keen competition among sellers, resulting in the naming of lower figures than any heretofore realized. Quotations continue nominal on the basis of 5% cents for Galvanized Four-Point, and 41/4 cents for Painted, but these rates are shaded considerably for orders of any size.

WASHITA STONE.

The following circular, which has been issued jointly by George Chase, 107th street and First avenue, New York, and the A. F. Pike Manufacturing Company, Pike Station, N. H., will be interesting to our readers as relating to the quality, production and price of Washita Oil-Stone

We beg to call your attention to the fact that we have arranged to control the entire production of all strictly good Washita Oil-St quarries. Years of experience and careful and thorough personal investigations re-cently made have proved to us that there are as yet discovered only three quarries capable of producing Washita Oil-Stone suitable for shapening edge tools, and from these quarries only are produced the best quality of Stone of even grit, entirely free from hard spots and sand holes, and having a sharp, quick-cutting quality possessed by no other stone. By careful selections we believe we are able to offer Stones superior to any others found in the world. Every Stone we send out for best quality of No. 1 or extra will give excellent satisfaction. We have tried stones from the various quarries, hoping we might find something as good, for, like all other things, the best quality is expensive to produce, but only Stone from these three quarries have proved satisfactory, the others being of little or no value for use on account of sand holes, hard spots

of these poorer grades, first, by the use of bleaching acids, then drying them thor-oughly, and finally filling up the sand holes with calcine plaster, make them appear all right to those not thoroughly posted in the business; but as soon as the oil or water is asplied and the stones used, you discover that they are worthless. There have been stones sold during the past year, which were made from old, condemned stock, which has demoralized prices and put stone on the market that is entirely worthless; and every one knows there is nothing more useless than a poor whetstone, as we have been testing all the different kinds of Washita Stones quarried. We have a small stock of the poor Stone on hand, which we keep to meet the quality and prices of same kind made and sold by other parties, which we do not recommend and do not like to sell; but if any one wants it, our prices for this kind will be as low as the lowest, but we would call your special attention to the best quali-ties, which we guarantee to give entire satisfaction, and we quote for present only, as prices must soon rule higher for this grade:

Washita Stone, Extra, from best quarries . We quote the poorer quality:

We guarantee them to be as good as those offered you by other parties. The prices are net for both qualities. We have tried to make a plain statement of facts, so you can know what you are buying, and you will get from us just what you order. All pre-vious prices are this day canceled. No orders for less than 100 pounds at these

prices. Terms net, 30 days. MISCELLANEOUS PRICES.

The Rhode Island Horse Shoe Company, Providence, R. I., for whom Durrie & Mc Carthy are agents, 97 Chambers street, New York, are now putting on the market and prepared to ship promptly the new Calk which is described among the new goods on page 12. The prices are as follows: Dull oo, 7 cents; o to 5, 61/2 cents; Sharp oo, 8 cents; o to 5, 71/2 cents, net, per pound, f.o.b., Valley Falls, Ohio.

The advertisement among our Special Notices on page 21, in which the Manhattan Hardware Company announce reduced and net prices on their goods, will be of interest to our readers. They advise us that the system they have adopted of making these ow net prices on all orders amounting to less than \$1000 has resulted in a substantial increase of their trade.

The Globe Scissors Sharpener, which is nade by the Globe Manufacturing Company, 926 Walnut street, Philadelphia, and illustrated among our Hardware Novelties on page 31, is sold as follows:

subject to a discount of 25 per cent. following are the prices of the Globe Radiant Heat, Gas and Stove Toaster, made by the same parties, and illustrated as above, the list being subject to a discount of 20 per

Gas Burner Toaster, No. 1... Gas Stove Toaster, No. 3.... Coal Range Toaster, No. 3...

Their Combined Detachable-Handle Tack Puller, Hammer, &c., also illustrated among the new goods, is sold as follows: Plain per gross, \$21.60; Bronzed, per gross, \$23 subject to a discount of 20 and 5 per cent. All the above prices are subject to an additional discount of 4 per cent. for cash in to days, or 2 per cent. for cash in 30 days.

ITEMS.

The Dayton Screw Company, Dayton, Ohio, have just completed 17 new Shavers in addition to their regular plant, and also, facture of Screws, and meeting prices of competing companies.

We have received a letter from the Geneva Tool Company, manufacturers of Scythes, Snaths, Forks, Hoes, Rakes, Plows, &c., Geneva, Ohio, advising us that they have employed Samuel A. Haines as their selling agent, whose office, at 88 Chambers street, New York, will be supplied with a full set of samples of their goods, of which at all times he is authorized to name their best prices and terms for home and export trade. In this connection they also mention that having largely increased facilities for the production of both Wood and Steel Goods of approved quality, and recognizing the popularity and extensive acquaintance of Mr. Haines, they are looking forward to a largely

John H. Graham & Co., 113 Chambers street, New York, have been appointed agents for the sale of the Nantasket Roller Skates. manufactured by the Nantasket Roller Skate Company, Lowell, Mass. The catalogue of these goods is also at hand, neatly illustrat ing the different styles, on which, we are informed, John H. Graham & Co. are in a position to give the manufacturers' best terms, and thus make satisfactory prices to

The Syracuse Twist Drill Company, Syracuse, N. Y., whose advertisement appears on page 29, announce in a circular that they have completed the rebuilding of their factory upon the site of the one recently destroyed by fire, and with enlarged and improved facilities are again manufacturing their line of Drills for wood and metal,

The Cincinnati Tin and Japan Company, Cincinnati, Ohio, importers and dealers in Tin Plate and Metals, Japanned, Plain and Stamped Ware and Tinners' Supplies, have ssued a new catalogue of their goods. It comprises a line of Japanned Ware, Coal Vases, Water Coolers, Oil Tanks, Coal Hods, Stamped Ware, Tinners' Trimmings, &c. It is accompanied also with a discount sheet giving their prices on the whole line of stationary Baker's Lamp, which is designed will assist in explaining our meaning. All to light the baker's oven, and which they Hardware shelves should be 15 inches deep, to light the baker's oven, and which they describe as non-explosive, economical and giving a brilliant light. Another circular is levoted to their Rotary Churn, of which a description is given, and the advantages connected with the use of which are enu-

The Globe Manufacturing Company, 926 Walnut street, Philadelphia, have issued a catalogue of the line of Hardware Specialies the manufacture of which they have commenced. This company was organized and chartered on the 18th of March, 1884, and of it Rudolph M. Hunter is president and Homer A. Herr secretary and treasurer. In this catalogue they, for the first time address the trade, calling attention to their various patented specialties, alluding especially to their Combination Dipper, Weigher and Measurer, Scissors Sharpener, Ice-Breaker, Tourists' and Ladies' Lemon Squeezer, Regular Lemon Squeezer, Cake Mixers, Egg Beaters and other articles, some of which are illustrated among the Hardware Novelties on page 31. They express the opinion that their goods meet an actual want in Hardware Specialties, as many of them will have little, if any, competition. They are the sole owners of all the inventions illustrated in the catalogue, and intimate that they have a number of others, on the practical utility of which they are now experimenting.

ARRANGEMENTS OF HARDWARE STORES.

In reply to the inquiries which appeared in these columns a few weeks ago, we are pleased to give our correspondents who desired the information, and to our readers generally, the suggestions which are contained in the following letter from a Hardware man in Ohio:

To the Editor of the Iron Age: In your ssue of October 2 I notice an inquiry from "Hardware Man" in regard to arrangement of Hardware store. Some eight years ago I fitted up my present salesroom accord-ing to my idea, and, while during that time I have seen some parts that might be im-proved or changed to advantage, the main plan has proved very convenient and satisfactory. On one side at front of store plan has proved very convenient and saus-factory. On one side at front of store I have a 12-foot showcase made flush with shelving and hung with glass doors, and used for display of carpenters' and other mechanics' Tools. The case can be lined with red cotton flannel, which looks neat and is inexpensive. To the rear and adjoining this case I have some 600 wood drawers or boxes of different sizes. I think 6 x 6 for Door Locks is the best size; for some Tools and other goods 5 x 7, 6 x 8 and 6 x 10 are convenient, and for Augur Bits, Augurs, Files, &c., 3 x 14 and 16 x 18 are used. Shelving and small drawers are 12 inches in depth. I have partitions running up and down 30 inches apart, and drawers slide on shelving side by side. For pulls I use Porcelain Knobs placed on lower edge of drawers. This position will enable drawer to rull out acciling the property of the property of

to pull out easily and give room for sampling of goods above the pull.

I do not agree with the communication signed "S. H. Green," in regard to finish of drawers. 1 have seen green-glazed paper used that looked well when first put on, but in the course of time commenced to peel off and show ragged edges where samples were changed, as they have to be frequently. I prefer bright green paint. Under the prefer bright green paint. Under the counter shelf large drawers can be used for articles too bulky to be sampled, and below this the space can be boxed and drop doors be used, thus protecting goods from dirt and dust that naturally accumulate from sweep-ing and dusting. For Nails I use what might be called a skeleton counter, parti-tions being put in about 18 inches apart, and bottom board placed on a bevel and proje out, so that a scale scoop can be partly punder the projection. Each bin of the under the projection. Each bin of the size mentioned will hold a keg or more of Nails. On opposite side of store I have shelving for On opposite side of store 1 nave such goods as cannot easily be sampled. Shelving is all 12 inches deep, 8 inches apart and partitioned every 36 inches with turned walnut dividers. From floor to top to and drawers is 7 feet. To of shelving and drawers is reach much above this hight would require a step-ladder, which is almost invariably in the way. I have utilized the vacant space that comes between top of shelving and ceiling by a balcony that ex-tends on both sides and across back end of room. It is reached by a skeleton iron stair way on one side, placed directly over cellar stairway, so there is no room wasted. If there is anything I would have in a new store built just according to my idea of per-fection it would be such an arrangement; it's as "handy as a pocket in a shirt," and is more available than a second story, besides utilizing room that can be well spared with our present system of high ceilings. The balcony should be about 4 feet wide, 5 inches thick, and ceiled with 3-inch lumber; it can be supported from above with iron rods fastened through joists. A neat wire railing on the outside, painted green or other bright color, will make it attractive. It can be shelved for surplus stock, or used for storing goods too bulky to be put on shelves. It is always desirable in any branch of merchandise to display as many goods and in as attractive a form as possible. Considerable taste can be shown in sampling goods on drawers. Condense similar lines together, but don't try to crowd too many samples on

going into practical details that will be valued by our Hardware readers. They will also be interested in the diagrams with which our correspondents have illustrated the outlines of their plan:

HOUSTON, TEXAS, October 13, 1884. To the Editor of the Iron Age: In reply the inquiry of "Indiana Hardware Man," to the Editor of the Iron Age: In reply to the inquiry of "Indiana Hardware Man," we venture to give the writer's experience of over 22 years in the retail and wholesale Hardware business, under various circumstances, in different places, on the road and We have circulars also describing a in the house. The accompanying sketches never less. The counter shelf or ledge never less than 12 or 15 inches. The shelves proper

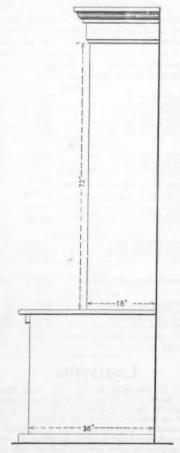
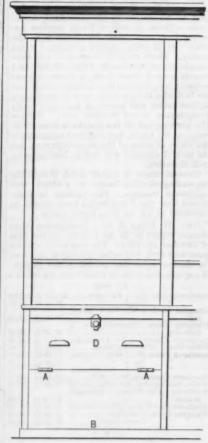


Fig. 1.—Sectional View of Shelving, with Measurements.

should be made movable (see sketch), bewhere immovable shelves are used the first shelf should be 10 or 11 inches above the counter or ledge, the entire length of the shelving. This space is a proper place for such goods as Butcher Knives, Shelf Brackets, Chisels, Gouges, Files, Wrenches, Hasps and Staples. Rayor. Strops. Screw. Drivers. Staples, Razor Strops, Screw-Drivers, Augers, Hammers, Hatchets and such other goods as are put up in long packages. Table Cutlery should be on first shelf, in front part of store, standing on end, label facing



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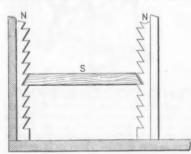
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Fig. 2.—Front View, Showing Arrangement of Drop Lid.

requiring a space of about II inches highall other shelves should be about 7 inches

In most Hardware stores kindred lines of goods are scattered too much; for instance, Door Locks, Knobs, Door Bolts, &c., should be near each other. Screw Hooks and Eyes, Picture Nails, Cornice and Lamp Hooks, C. and H. Hooks, &c., should be together. Such goods as Cupboard and Transom Catches, Sash Fasts and Lifts, Drawer Pulls, Drop Handles, Shutter Bars, Buttons, &c., should be together, and so on through the decdrawers. Condense similar lines together, but don't try to crowd too many samples on outside or goods inside of drawers. F. A. P. The following communication has also been received, giving other suggestions and

should measure $4\frac{1}{2}$ x $4\frac{1}{2}$ or $5 \times 5 \times 12$ ginia, but did not like it. Found it soft enough, but dirty. There are other South-Screw Eyes and Hooks, Drawer and Picture Probe Window Spring Bolts Saw Screws Knobs, Window-Spring Bolts, Saw Screws, &c., boxes 4½ or 5 x 2 x 12 inches will be found very convenient. All Hardware shelves should have a base shelf 3 inches from floor; this is a good place for Strap and T Hinges, Hook and Eye Hinges, Barn Door Hangers, Rollers and Rail, Well Wheels, G. S. Fixtures, Scythe Stones and publisher goods as cannot be materially such other goods as cannot be materially injured by an accumulation of dust or an occasional drop of water from the sprinkler.
This should not occur, but the most stringent regulations cannot entirely prevent it. Under the counter shelf, in place of drawers, we use a drop lid (see sketch); this lid, when closed or up, protects the goods from dust and looks as though there were drawers. When goods are wanted, the lid is let down, and no ungainly box sticks out 10 or 12 inches to interfere with persons passing. All



S.—Shelf Stick or Support; should be about 1 inch wide and ¼ or ¾ inch thick and as long as the Shelf is deep. It should be made of hardwood. N N.—Notches at each end of dividing upright for Shelf Stick to rest on.

Fig 3 .- Method of Supporting Shelves.

Hardware men will fully appreciate this point if they use drawers under their counter shelf. Such goods as Chisels, Gouges, counter sneir. Such goods as Chisels, Gouges, Wrenches, Augers, Auger Bite, Screw-Drivers, and nearly all goods in packages over 6 inches long, we never sample, but place in shelves, label end front.

Our ideas are probably claiming too much of your valuable space, especially as it is utterly impossible to describe, and prescribe, in an article like this, to suit all cases, cause space at disposal, amount and kind stock carried, would materially modify some of the above suggestions. The cardinal points, in our opinion, to make suitable Hard-ware shelves are depth of shelf and counter shelf; all else is subordinate to this. If possible, all Hardware shelves should be made movable. Before closing, we would call attention to one other very important item in a retail Hardware store, vis., a convenient way of handling Nails. A box on four sash rollers (see sketch for size and shape) we

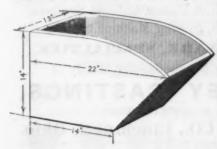


Fig. 4.-Nail Box, with Outside Measurements, to be Made of %-Inch or 1-Inch Lumber.

have found the most desirable way of handling Nails for retail. This box will contain 100 pounds. It can be pulled from under the counter, filled, emptied and kept clean, and is a great improvement over any other mode we know of E. H. RENISCH & Co.

New York Iron Market.

The condition of business has been as unsatisfactory during the week just ended as for several weeks past, the demand being exceedingly slow in almost every line. Many orders are held in abeyance until after the Presidential election shall have take they will be in the market early in November, or at furthest in December, if the result of the election suits them. Some very decided statements are made on this point, and it remains to be seen whether the predictions of an active trade in the event of the elecpression in the case of the election of his opponent, will be realized. It is very certain, however, that the political contest is now exerting a much greater influence on Common Iron, at mill, 1.45¢ @ 1.7¢; from business than was anticipated would be the store, 1.9¢ @ 2¢. case several months ago. It is not usual for a Presidential election to exercise so much effect on trade, but the present instance seems to be an exception. Prices show very little change, sellers being indisposed, under the circumstances, to make any attempt to force sales.

American Pig.-The transactions of the week have been very limited in number, and amount to a very small quantity in the aggregate. Sellers seem to take very little interest in business, manifesting indifference as to whether their customers take hold or not. They claim that prices are steady, being down now to the lowest point possible under existing conditions of manufacture, and it is impossible for them to offer inducementa. They prefer not to endeavor to force competition of Western and Southern Pig lot Iron Plates are as follows: Common as follows: "We tried some No. 1 Vir- 44 # @ 51/4.

party who, we understand, is using it altogether." Another large consumer of Pig Iron writes as follows: "I have been solicited for trade in Western and Southern Irons more or less for the past six months, but so far have bought only sample lots. I know that one of my neighbors has bought more freely than I, but think that the Stove-plate foundrymen have bought but little. Prices quoted me have been from \$21.50 to \$22.50, delivered at works or at Boston. The average freight from Hoboken or Perth Amboy to Boston on Pennsylvania Iron is \$1.50. With Lehigh Irons at \$20, the choice in my case would be in favor of the Lehigh. I should say that the proportion of Southern and Western Iron used was not one-third of the whole consumption in the East." A very large Stove manufacturer in Massachusetts says: "We have been making experiments during the past two years with Southern Iron. and have finally discovered a brand which works very nicely with Pennsylvania Irons that we can buy at from 50¢ to \$1 cheaper than the Pennsylvania brands of equal quality, and consequently we have been for the past year using Southern Iron for about one-third of our melt." Another large Pig-Iron consumer in Massachusetts writes as follows: "We have had Western and Southern Irons offered at very low prices, and have been tempted to use several brands, not only Charcoal Irons, but Coke Iron We have been well satisfied, and, as the price has been a little less than good Eastern Pennsylvania Irons, we shall continue to use them with prices relatively as now quoted. We have of-fers of Cold-Blast Charcoal Wheel Iron delivered on wharf in Boston at \$24.75, and Charcoal Warm-Blast (800° or 900°) at \$20.75, same delivery." We shall, in the course of the next week or two, receive more complete information on this subject. So far as the local demand for Northern Irons is concerned, there seems to be no special weakness in any grade. Quotations of Standard North River and Lehigh Irons continue as follows, tidewater delivery No. 1 X Foundry, \$19.50 @ \$20.50, with a few brands quoted at \$21; No. 2 X Foundry. \$18 @ \$19; Gray Forge, \$16.50 @ \$17.50. Outside brands sell at about \$1 below these quotations

Scotch Pig-The receipts during the past reek were about the same as they have been for several weeks. The demand for forward delivery continues exceedingly light. most parties still purchasing from hand to mouth. Our quotations for small lots are as follows: Coltness, \$22 @ \$22.50; Gartsherrie, \$21 to arrive, \$22 from yard; Shotts, \$21.50 @ \$21.75 to arrive, \$22 from yard; Langloan, \$21.50 to arrive, \$22.50 from yard; Carnbroe, \$20.50 to arrive, \$21 from yard; Glengarnock, \$20.50 to arrive; Summerlee, \$21 to arrive; Dalmellington, \$21 to arrive; Eglinton, \$19.25 @ \$19.50 to arrive; Clyde, \$20 to arrive

Bessemer Pig and Spiegeleisen .-Quotations for Foreign Bessemer are entirely nominal, with no sales reported and no inquiries on the market. Importers name \$18.50 @ \$19 as the probable rates, which might possibly be changed in some respects if there were any business in sight. The week has developed no new demand for Spiegeleisen, which is quoted at \$26 for 20 %, with a possibility that a firm offer could be placed at something lower.

Bar Iron.-There is a limited demand for small lots, of Bar Iron, which in the aggregate have amounted to sufficient business to put some of the mills which supply this market in a little better position than they have been. One company now state their orders will enable them to run their Bar mill full for 30 days, which is a rather gratifying fact to report. At the same time Quite a number of consumers announce that it must be noted that the demand is by no means general, and there are other establishments which are badly in need of orders and are offering Iron at fully as low prices as have been heretofore quoted. Common Bar Iron can be had in carload lots from dock at 1.55¢, and Best Refined at 1.85¢. tion of one candidate, or a still deeper de- Store trade is still inactive, with occasional concessions from quoted rates to best buyers. Nominal rates are as follows : Best Refined, at mill, 1.65¢ @ 2¢; from store, 2¢ @ 2.4¢;

Structural and Shaped Iron.-Business has been very quiet during the week, and no developments in the way of new orders have come upon the market. Foreign competition is looming up in this line, particularly for Beams. Small lots have been sold here recently for shipment to points in the interior at prices considerably below the combination rates. Small lots are quoted as follows: Angles, from store, 2.3# @ 2.6# Tees, from store, 2.9# @ 3#; Beams and Channels, on dock, 3.5¢.

Plates.-While the general demand has been light, a few good orders have been placed during the week. Some of the mills supplying this market report themselves in better shape now than has latterly been the business, and assume a waiting attitude. We case, and they are, consequently, a little have made some inquiry concerning the firmer in their views. Quotations for small Irons with Eastern Irons in the New or Tank, 21/4 @ 2.3¢; Refined, 21/2¢; Shell, England market, and will summarize the 2%\$; Flange, 3%\$; Extra Flange, 4\$ @ replies which have thus far come to hand. 4%\$. For small lots of Steel Plates quota-One large foundry company writes us tions are as follows: Tank, 31/4 @ 4#; Boiler,

Sheet Iron.-There has been a fair busi ness up to the beginning of the present week, but orders now are scarcer, and there is a probability that the demand will be very light for at least a week or two. Prices of Galvanized Iron are somewhat easier than they have been, owing to the disruption of the combination, but quotations are nominally unchanged from the rates heretofore given under this head. Prices of Black and Galvanized will be found in our list of New York Wholesale Prices.

Merchant Steel .- Business is very quiet, with no special change in price. Quotations continue about as follows: American Tool Steel, o 16 : Tool Steel of special grades and finer quality, 12¢ @ 20¢; Crucible Machinery, 5¢ @ 6¢; Spring and Tire, 3¢ @ 31/4; Open-Hearth Machinery, 30 @ 31/4; Bessemer Machinery, 3¢; English Tool, 14 1/2 @ 15¢.

Steel Rails .- While the business placed during the week has been of small proportions, 3000 tons being about the extent of the orders that have transpired, the better condition of the mills in respect to work secured inclines them to firmness in prices, and quotations now range from \$28 to \$30 for deliveries to suit the convenience of the manufacturers. There are inquiries on the market which may develop in considerable business if the views of buyers and sellers can be harmonized, but at present there seems to be a disposition on the part of railroad companies to withhold their orders in the hope that the firmness of manufacturers will be only temporary. This hope, however, may be delusive, as there is no doubt that the mills now in operation have all of them secured work for the winter months.

Steel Wire Rods .- The demand continues disappointing, no business of any consequence having been transacted recently. Sellers still ask from \$45 to \$46, according

to time of delivery. Old Rails.-We have been reported sale of 1000 tons of Old T Rails at \$17, at Jersey City. This is the only transaction that has taken place in this vicinity, but negotiations have been progressing for quite a number of large lots of Rails, which, however, resulted in no business, the views of buyers and sellers being too far apart, and there being conditions of a special nature which have also interfered with sales. About 500 tons of Old Steel Rails sold at \$16.75 on the line of a railroad in Pennsylvania. More are offered at \$17, delivered at mill.

Scrap Iron.-The demand has been very quiet during the week, and we can hear of no sales. No. 1 Wrought Scrap from yard is quoted at \$19 @ \$20, according to location.

Business on the Metal Exchange has partaken of the general dullness, not a single transaction having been reported since our last issue.

Coal.

Anthracite Coal looks better, from the sellers' standpoint. Under the policy of restriction the domestic sizes are becoming scarce, and Stove is hard to get. Another week's suspension at the collieries went into effect last night, with the object of hardening prices. Some dealers say they have more orders than they can fill. Already the alleged ruinous cutting among rival compa-nies, which has produced demoralization for some time past, seems to have been almost wholly overcome. It is certain that prices are no longer drooping; although it would be bold to say that the full circular rates are always obtained. Steam Coals, or the sizes adapted to manufacturing, still drag, and sales in some cases are made at low figures.

Freights eastward are gradually stiffening, at an advance of 10¢ @ 15¢ \$ ton to Boston.

prices are quoted \$3.10 @ \$3.50, f.o.b. in freights received by reason of the less mined thus far in the year 1884 is 22,985, 124 tons, compared with 24,815,257 tons for the same period last year, a decrease of the same period last year, a decrease of 1,830,133 tons. The total amount of Bituminous sent to the Eastern markets thus far in the year 1884 is 4,390,132 tons, compared with 4,000,633 tons for the corresponding period last year.

Among the events of the week was the charter of a schooner to take Coal from Mobile to Aspinwall for the Pacific Mail Steamship Company.

Old Metals, Rags, &c.

The purchasing prices offered by dealers are as follows:

Copper, heavy B D,	\$.08	@	
light "	.07	65	
Copper Bottoms	.07	6	
Vollow Motel	.06	0	****
Brass, beavy	.06	a	
" Hght "	.05	6	
Composition, heavy "	.08	6	
Lead, beavy	.0004		
Tea Lead "	.0212	6	.02%
	.0212	8	.023
Zinc	.19		
Pewter, No. 1	.08	9	
No. 2		0	2000
Wrought Iron ton,		0	
LAKIB	10.00	0	****
SLOVE FILLS LIGHT	10.00	0	
Machinery	12.00	3	12.5
Grate Bars "1	4.00	0	0000
Stereotype Plates B.b.	.04	0	
Electrotype ""	.081/4	@	
Small Type	.05	60	.051
The prices engrent (prices	paid	har	Loon

NEW JERSEY. dealers) for Rags, &c., are as follows : will build a very large window-glass factory at Slaterford, and that work upon it will be

9 lb, 81/4@ 4 Canvas, Lines..... Cotton...... No. 2..... commenced this month.

Soft Woolens			 	 	 64	4 0	416
Mixed Rags			 	 	66	136 6	134
Gunny Bagging					84	134 6	114
Jute Butts			 	 	 6.6	136 @	
Kentucky Bagging			 	 	 6.6	214 6	216
Book Stock				 	4.5	136 6	184
Newspapers			 	 	6.5	1 6	
Waste Paper and S	cre	ns	 		 8.6	16 6	
Kentucky Bale Roy	200	Post			6.6	316 6	

Our Dormant Shipping Interests.

To the Editor of The Iron Age: The state ment comes from Philadelphia that the four steamers belonging to the American line sailing from that port to Liverpool are to be sold to an English company. This removes the American flag from the last Transatlantic steamer, and probably ends all attempts to conduct this trade under our own flag so long as our navigation laws and the conditions remain as they are, and our Government refuses proper subsidies to these lines. The American Steamship Company, of Philadelphia, which has been operating these ves sels, is almost exclusively owned, and is absolutely controlled, by the Pennsylvania Railrcad Company. The line consists of four American ships sailing under American colors, and five British-built steamers sailing under British colors. The British vessels have steadily earned a profit, while the American ships have persistently failed to meet necessary expenses, and year by year the American Steamship Company have to make good considerable deficit on these vessels. It is evident from this statement that the question of the original cost of the vessels had nothing to do with the failure of the line to make warment. the line to make money, interest on the original cost being neither demanded nor expected. Nor can the failure of the American ships to pay expenses be explained by criticism of the management, as the manage-ment of both the British and American built ships was the same, and the British ships

In explaining the cause of the failure one of the officers of the line states that there are two reasons. In the first place. the construction of the American-built ships did not give as large a freight capacity as the English ships; consequently the latter, requiring only the same sized crew, could earn more in proportion to the running ex-penses. This, however, was only a question of construction, and could be easily reme-died in building other vessels. But the second and chief reason for the failure was that the English vessels shipped their crews in Liverpool, which the American vessels ould not legally do, and, as the wages the Liverpool seamen were much less than those paid the American, the running ex-penses of the ships were consequently much less. I think one other reason could have been given, and that is the difference in the methods and amount of taxation of capital invested in ships in the two coun-

The failure to operate vessels in this trade profitably under the American flag naturally suggests the question, What is the remedy? The first answer is, A just taxation in charges upon capital invested in steamships engaged in this trade, so that the charges in this country shall not exceed those paid upon English vessels engaged in similar trade. It is difficult to see how this point can be reached without co-operation between the National and State Governments. The State Governments have the portion of taxation upon property invested in these States, and wherever the home of the company owning these vessels is there the property of the company will be taxed. These rates of taxation vary in different States, and so great is the difference that vessels virtually owned in one State are registered and taxed in another where rateof taxation is less than that where the owners of the vessels reside. American capital can, of course, be contributed to companies formed in other countries, and the vessels can be registered in these coun-tries and taxes paid there, so that, so far as the employment of American capital in vessels is concerned, the problem is easily selved But the problem is a more impor-tant one than this, and that is, How shall American capital be profitably invested in ships which fly the American flag? Under existing circumstances and conditions the only way out of the difficulty would seem to be a system of subsidies to vessels sailing under our own flag, these subsidies being, in a measure, equal to the difference in the run-Bituminous Coal is freely slaughtered, being without perceptible improvement, and lines are established, the difference in the subsidies a large portion of which will be paid to lobbyists, and it is these payments to lobbyists which have stirred up so much opposition to subsidizing vessels. But to opposition to subsidizing vessels. But to respectable subsidies given for a legitimate purpose and used only in furtherance of that purpose, it does not occur to me that the American people will be opposed. PROTECTION. New York, October 27, 1884.

INDUSTRIAL ITEMS.

MASSACHUSETTS.

The Geo. F. Blake Manufacturing Company, 44 Washington street, Boston, have received orders for the pumping engines for the town of Wellesley. The plant will con-sist of one duplex compound condensing engine having a capacity of 1,000,000 gallons in 24 hours, two boilers and all the machinery for a complete pumping apparatus.

CONNECTICUT.

The old stove iron foundry in Crow Hollow, Meriden, which was one of the first foundries built in New England, and where W. M. Johnson used to melt pig iron that had to be brought from Middletown in ox teams, is to be converted into a veterinary hospital.

It is reported that Philadelphia capitalists

The employees of Benj. Atha & Co.'s steel

been notified of a 10 per cent. reduction in wages. This is the second reduction of 10 per cent. within a year.

PENNSYLVANIA.

A new nickel-plating works will soon be started at Lebanon.

A new?glass works is projected at New Ringgold.

The Ahl Furnaces, at Boiling Springs, have been purchased by D. V. Ahl for \$70,000.

The firm of M. V. Smith & Co., that operated the Tyrone Forges, at Tyrone, Blair County, have been dissolved, Mr. Smith is now engaged in the profession of metallurgical engineering. The plant of netallurgical engineering. the forges has been sold and the works will be dismantled.

Notice of a 10 per cent. reduction on all wages was posted at the Pottsville Iron and Steel Company's Fishback Rolling Mill, near Pottsville, on the 18th inst. The men have taken no action on the subject yet, but there is talk of striking. The mills, which are employed in the manufacture of bridge and building iron, shut down on the day mentioned, on account of the low prices and scarcity of orders. The re-duction is to go into effect November 1.

PITTSBURGH AND VICINITY.

Lucy Furnace No. 2 is now running to its utmost capacity. The employees feel enthusiastic and boastful over the heavy work the furnace has been doing, it being claimed that she is turning out more iron per day than any other furnace in the United States. As an inducement to the hands employed, they are given an increase of wages of ts for every 10 tons over 170 per day, at which rate they make from 20 to 40 cents An average taken of the iron turned extra out during the past two weeks shows a daily output of 225 tons.

Dilworth, Porter & Co. have erected a derrick on their mill property, South Side, and will commence drilling a well for gas in a few days.

Steel nails from purchased slabs are eing made at the factory of the Kelly Nail and Iron Company, Ironton.

Fayette Brown, receiver of Brown, Bonnell & Co., Youngstown, makes his report for September, as follows: Balance on hand for September 1, \$6805.71; receipts in September, \$105,683.80; disbursements, \$100,leaving a balance on September 3 of \$11,823.78.

Summers Bros. & Co., Struthers, have ust received an order from the Plaquemine Lumber and Shingle Company, Plaquemine, La., which calls for band iron, nickel-plated, to be used for exposition purposes at the coming World's Fair at New Orleans, La. ILLINOIS.

Thomas C. Massey, manufacturer of the E&K" instantaneous-grip vises, whose re-noval from Batavia to Chicago was announced a week or two since, informs us that his address at the latter place is 11-23 Jefferson street.

An order for a 75-horse-power Heine safety boiler of steel has been placed with Kroeschell Brothers, of Chicago, by the Ernst Brothers Brewing Company.

The nail department of the Calumet Iron and Steel Company, at Cummings, is running full time

The Atchison, Topeka and Santa Fé Rail-vay has recently ordered from the Dean Steam Pump Company, through the Chicago house of the latter company, a duplex compound pumping engine having a capacity of 1,000,000 gallons daily, and which is subject to a constant pressure of 160 pounds.

The O'Connell Coal Company, of Joliet, have been incorporated, with a capital stock of

INDIANA.

Cobb's Iron and Nail Company, at Aurora, have succeeded in engaging enough men to start their works. The former employees, numbering about 300, are still striking. MISSOURI.

A report from St. Louis states that on the 22d inst, the works of the Southern Barbed Wire Company were almost totally destroyed by fire. The loss on stock and made about \$50,000; insurance, \$50,750. The loss on stock and machinery is on the building is \$7000; insurance, \$5000.

The St. Louis Stamping Company are running their Granite Iron Rolling full force.

Wheeling nail-makers have been on a strike against the system of requiring nailers to repair, at their own expense, any breakages that may occur in their machines. This has long being the rule in Wheeling, but has not obtained elsewhere. We understand that the difficulty has been amicably ad-We understand justed, though on what basis we do not know.

ALABAMA.

The Amalgamated employees of the Birmingham Rolling Mill, Birmingham, have declared a strike against a 10 per cent. reduction. This was formerly one of the strongest Association mills in the country, and employed upward of 500 men.

MARYLAND.

Detrick & Harvey, of Baltimore, are building a machine shop, 116 x 60, two stories high. It will be equipped with the best machinery, and is expected to be ready for starting up next winter. They examined starting up next winter. They examined many machine-shop structures, and concluded to adopt the plan followed by the Yale & Towne Manufacturing Company, Stamford, Conn. The shop will be well lighted, extra land having been secured, more than that covered by the building. The firm have improved their single-post iron planer and have brought out a no heavy milling machine

The Marshall Car Wheel and Foundry Company, of Marshall, have contracted for a new building, 75 x 260 feet, to take the place of the structure recently burned. works, at Newark, numbering 150, have new works will be larger than the old ones.

GOODS



1884. PENNSYLVANIA LAWN MOWER. Has no Equal Surassing all others, and pronounced "THE BEST."

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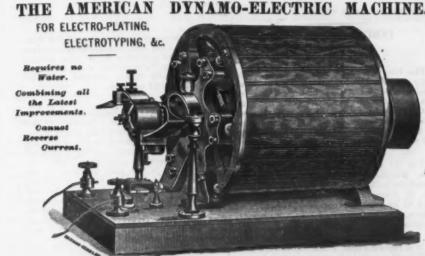
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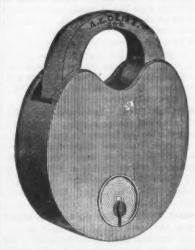
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Fine German Silver

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No. 72. Dividers, German Silver, 2 inches long with Pen, Pencil and Needle Points, . \$2.50 No. 73.—Dividers, German Silver, 6 inches long, with Pen, Pencil and Needle Points and Length No. 78 -Spacing Dividers, all steel, with Spring and Adjusting Screw, . No. 81 .- Bow Pen, all steel, with Spring and Adjusting Screw, No. 84.—Bow Pencil, all steel, with Spring and Adjusting Screw, No. 89.—Drawing Pen, 4 to 6 inches long, German Silver, fine finish, Hinge to Pen and Protracting Pin,

These instruments are of fine quality, and are recommended to Architects, Carpenters and Machinists for accurate drafting. The prices quoted do NOT include Express

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also export large lots of them. The STAR BLADES we control, and are the New York Agents for the Griffin Bracket Blades. We also sell Wood, Designs, Clock Movements, and all things else in the line.

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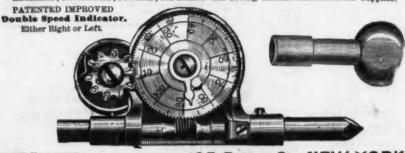
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CHAMPION HORSE NAIL CO., Appleton, Wis. Daley's Improved Pat. Hand-Cuffs.

disposed of for delivery during the source quarter of the year. Heavy manufactured iron is dull. In wire rods more business is being done, and fencing wire is a little color. Calcanized sheets are also steady



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The Most Popular Combination Tool in the Trade.

Made in the most Thorough Manner, of the Best Material and Finish,

By TOWER & LYON, 96 Chambers Street,

English Letter.

(From Our Regular Correspondent.) LONDON, October 13, 1884. THE OUTLOOK

has not undergone any very important varitions since my last letter, but I think it is better, rather than worse, on the whole. One swallow does not make a summer, I am well aware, but the single bird is a harbinger to be relied upon, and its fellows are sure to At present we are be relied upon, and its fellows are sure to follow sconer or later. At present we are not quite certain whether we have seen the swallow; consequently, all vaticinations as to the future must be more or less unreliable. Some among us are beginning to swallow; Some among us are beginning to swear by the good time coming, but the cautious ones decline to follow suit, and urge that nothing has transpired as yet of sufficient weight to lend adequate support to the free indulgence in optimism. If I were umpire I should incline to the views of the cautious gentlemen, and would strongly advise the adoption of a waiting game. As I have had occasion to remark previously, we are decidedly doing a little better in many departments, but the departure has nothing of the boom about it, and some of the change consists of promise rather than performance. Surely, therefore, we can afford to wait and let events evolve themselves, instead of trying to force things in an unnatural manner. If to force things in an unnatural manner. If there are the foundations of a good coming demand we may rely upon its advent with the utmost certainty; whereas, if the founda-tion be absent or badly based, no amount of ingenuity or optimism will suffice to raise a satisfactory superstructure. The harvest has been a good one almost all over the world, but it is likely to be realized with exceptional slowness, inasmuch as the prices of wheat and other produce are so low that the farmers will hold as long they can before sending their stuff into the markets. A rush is very unlikely, therefore, but there is much likelihood of a steady stream, simply because few of the farmers anywhere will be able to withstand the whole of the winter without realizing. Then, ag in, your market will scarcely settle down after Presidential election on this side of Christmas; consequently, all the probabilities favor the opinion that 1884 will not see any great

THE IRON MARKET

has been slightly steadier this week, partly in anticipation of the quarterly meetings, and, during the latter part of the week, owing to the improved tone displayed at those gatherings in certain departments of the trade. As I foreshadowed in my last week's report under this head, no official alteration has been made in the price of marked bars : indeed, it is evident that in the present condition of that branch of the iron trade no augmentation could have been reasonably made. These bars are greatly affected by the progress of steel, as well as by the competition of good unmarked iron, so that they can scarcely be strictly regarded as being the leading criterion of the state of trade. Generally speaking, business in met-als seems to be rather better throughout the home trade, and the shipping season is at its hight for the northern ports. Season orders are helping many of the hardware industries, and there is fair ground for the expectation that the remainder of the year will be characterized by a moderate degree of activity. At Glasgow there has been a tolerably good turnover in warrants, which have been rather weaker in value, closing at 41/71/2 P rather weaker in value, cosing at 41/7/2 g? ton. Scotch special brands are generally unaltered, but in one or two instances are obtainable at about 6d. ?? ton under last week's rates. Shipments of Scotch pig are still below those of last year, but the make has been correspondingly reduced, and stocks are now about 7000 tons lower than they were at this date last year. At Middlesboro' there have been very few changes this week, No. 3 being nominally 36/6 @ 37/% ton. The shipments are moderate only, 7) ton. The shipments are moderate only, and, as eight furnaces have been changed from hematite to Cleveland pig, there is little probability of any early advance in values. Hematite pigs on the West Coast are without animation, but quotations may be regarded as being nominally a shade steadier, at 43/@44/6 for mixed lots, now that the production of these pigs in Cleveland and Scotland has been curtailed. In steadier. Galvanized sheets are also steady at the recent improvement in values. Ordinary finished iron has been neglected, save at the quarterly meetings. Old materials remain dull at last week's quotations, save that heavy wrought scrap is a trifle steadier

Freights are about as of late, pig iron from Freights are about as of late, pig iron from Glasgow to New York by ordinary steamer being 2/6 @ 3/ ?? ton. As to Cardiff and Bristol Channel ports, Edwardes, Robertson & Co., say: "The low state of the freight market does not appear to be any inducement to extend their operations with the States, as compared with the month of August The returns of the past month show a decline in quantities, notwithstanding the freight market ruled at a mere nominal rate, the room ket ruled at a mere nominal rate, the room for weight being easily procured at about 8/6 \$\gamma\$ ton. Inquiries are now made for supherphosphate, Newport to Savannah; the rate at which room will be found for this may be put down at 8/@ 9/\$\gamma\$ ton; there are no transactions other than this to be recorded for the Southern ports." Mr. W. Balchin reports: "Since the issue of my last circular freights to the principal Australian ports by steam have assumed a firmer tone, in consequence of the large parcels of sail, ships getting fair cargoes to most ports.

I am now informed that the two steam lines named in my last do not at present contemplate starting the new line of vessels

and merchandise is therefore going forward at rates much in favor of the shippers. To India, China and the Cape I have no ma-terial change in freights to report, the supply of tonnage, both steam and sail, being regulated by the demand."

Steel is without special features to note, with a medium turnover only at the majority of the works. In old railway leaf-spring steel the prevailing low prices are said to be causing some storing on the part of the deal out, but short time is becoming almost uni-It is said that 40,000 tons have re cently been ordered, but the report requires confirmation. Tin plates are about as last week vide my remarks as to the quarterly meeting of the trade. Some interest is being taken here in the subject of guaranteeing plates for your market, but the Liverpool middlemen are naturally dead against any such radical departure.

THE QUARTERLY MEETINGS

At Middlesboro' on October 7 the quarterly meeting of the North of England iron and allied trades was held in the Royal Exchange Contrary to general custom, there were no exhibits of any kind. The attendance was comparatively thin, and the tone of the market was depressed. Continued good shipments of pig iron from Middlesboro' are the only redeeming feature in the staple in-dustry, but the season for heavy exports is rapidly drawing to a close and further restriction is talked about. At Wolverhampton on October 8 there was a fairly good attendance of buyers, and venders were numerous. The chairman of the iron trade (Mr. Benjamin Hingley) announced that there would be no change upon the quarter's quotations. This leaves marked bars at £7. 10/ and the Round Oak brand at £8 2/6, Shropshire all-mine pigs being 80/ for cold and 60/ for hot-blast qualities. Reports from the chief makers were to the effect that the marked-bar trade is rather dull but that there is a little more doing in other descriptions of bars. Staffordshire bars of minimum quality were procurable at £5. 15/ Between that figure and £8. 2/6 prices are many, and indicate numerous grades of quality equally numerous. Ordinary bars were £6. 2/6, and plating bars £6. 10/, while bedstead angles were £6. 5/@£6. 7/6. The strip firms reported a better demand from the bedstead and the nail makers and quoted £5.15/@£6 \Re ton. Hoops were £6@£6.10/, with a fair trade. Sheet-makers were occasionally in a position to refuse orders that were not offered upon favorable terms, since the thin sheet-makers in particular have the chief mills fully engaged. The progress of the steel-sheet movement was distinct, the demand for steel sheets for stamping and of tinned plates for canning meats being never so large. The working-up and the galvanizing sheet branch are both alike improved upon a few weeks ago. Since the middle of last month the improvement must be set down at from 2/6 to 5/, and occasionally 7/6 # ton. Doubles for galvanizing casionally 7/6 % ton. Doubles for galvanizing were quoted £7. 7/6 @ £7. 17/6, and trebles, £8. 7/6 @ £8. 17/6. Certain Shropshire sheet firms quoted their singles at £7. 17/6, delivered Liverpool, and their doubles, £8. 7/6. Common wire rods for fencing were priced at £6. 7/6 @ £6. 10/ and £6. 12/6, delivered Liverpool. The Hollingswood Company, Limited, Wellington, reported themselves busy in sheets and wire rods; indeed, in Shropshire wire rods generally the last ten days has

previous quarterly meeting, though the attendance was scarcely so large. Two causes contributed to this result, viz., the partial recovery which has taken place within the last week or two in the price of common iron, and the intelligence, which rapidly spread through the meeting, that the colliers values. Hematite pigs on the West Coast are without animation, but quotations may be regarded as being nominally a shade steadier, at 43/@ 44/6 for mixed lots, now that the production of these pigs in Cleveland and Scotland has been curtailed. In the other leading smelting districts pig iron is fairly steady, good qualities having been disposed of for delivery during the fourth ported themselves fully employed up to the first cost of the steel, increased strength year's end, and unwilling, therefore, to look and toughness in the article made from it, at fresh orders except at an advance of from greater uniformity in the goods turned out, 5/ to 7/6 upon old prices, which were diffi-cult to obtain. Some good orders for bars of their quality and a cheapening of the cost cult to obtain. Some good orders for bars have been brought by the last two or three Australian mails, but, on the whole, the bar-mukers are poorly off. The local consumptive demand, in connection with the tube, wire and iron foundry branches, is below the average. Pig iron was not in a very large demand, though several sales of 300 and 500 tons in a line were mentioned, and prices were practically the same as for the past two or three weeks. An influential meeting of the Galvanized Iron Trade Association was held at Birmingham the same day. An animated discussion took left in that condition. As regards the quality the same day. An animated discussion took place on the position of trade, all the members present reporting that they were fully occupied and obtaining an advance on the prices ruling last quarter. From the amount of business offering and the increased prices of black sheets and spelter, higher rates may be expected. A quarterly meeting of the South Wales tin plate trade also was held at Birmingham on October 8, under the presidency of Mr. P. W. Flower, of Neath. It was reported that the exports of tin plates for the nine months ending September 30 amounted to 4,390,860 boxes, an increase of 261,800 boxes upon the corresponding period lian ports by steam have assumed a namer tone, in consequence of the large parcels of last year. Stocks at the outports were, fine and second goods now going forward to catch the Christmas markets, and the somewhat limited tonnage at present on the berth; rates are also well maintained by States; 15/ was named as the price of Walsh coke plates, and 18/ for Welsh charreported quiet, particularly from the United States; 15/ was named as the price of Welsh coke plates, and 18/ for Welsh charcoal plates.

THE BOARD OF TRADE RETURNS

R & LYON, from London to Australia, freights not being sufficiently remunerative to justify such a step. To the various ports in the United States and Canada a healthy competition is now going on by the different steam lines, limits at the total value of 24th inst., states that the riveters in the Clyde shippards have struck against the with £20,495,494 in the same month of last year, thus showing a slight increase. The with non-union men, but the strikers at tacked and drove away the latter.

against £32,307,465 in September, 1883. The quantity of iron and steel exported last month was 309,704 tons, valued at £2,093, 167, as against 367,361 tons and £2,465,843 in the same month of 1883. For the nine months of this year the total value of our exports was £176,660,007 against £176,666. exports was £176,969,097, against £179,665,085 in the same period of 1883.

THE PRINCIPAL EXPORTS TO THE UNITED STATES COMPRISED

Article.	Month of September, 1884.	Month of September, 1883.	Month of August, 1884.	
Alkaliewt	356,286	285,040	193,618	
Hardware & cutlery £	24,860	80,479	27,872	
Iron-Pigtons	15,094	20,819	21,395	
Bar, angle, rod, &c.				
tons	249	1,101	681	
Railroad, alltons	83	6,821	1,298	
Hoops, sheets, plates				
&ctons	1,109	1,859	4,778	
Im places	18,371	21,200	15,544	
Cust of Alongut	204	362	859	
- Oldining	3,307	2,016	952	
oreer unwrought	1,482	966	865	
Leart, all Sorts	76	56	72	
Steam engines£	1,129	4,159	3,989	
Other machinery, &c £	24,142	23,216	20,503	
Tin, unwroughtewt	20	341	201	
Special return — Iron	ete .	80		
railstons	- 7	50	4 000	
Steel rails "		6,508	1.282	

SCOTCH PIG IRON

has not varied a great deal since my last letter was penned, and values remain almost on the same level as they were a week ago. Warrants opened at 41/9, touched 41/6 on October 7, and closed at 41/7½ @ 41/8, with a tolerable amount of business doing. Special brands are mostly firm, owing to the reduced make and stocks. There are now reduced make and stocks. reduced make and stocks. There are now 92 furnaces at work in Scotland, against 94 a year ago. In Connal's stocks the quantity of pig is 582,532 tons, against 580,169 tons a year ago. Last week's decrease was 600 tons, but this rate is scarcely likely to be perpetuated. Shipments are now 74,806 tons behind those to the same date of last year. Imports of Middlesboro' pig into Scotland are 2987 tons in arrears. A failure for land are 2987 tons in arrears. A failure for £7000 odd took place last week in the Scotch iron trade

Crucible vs. Bessemer Steel.

Concluding an article enumerating the leading points in the controversy over the substitution of Bessemer steel for crucible steel in Great Britain, the Bulletin of the steel in Great Britain, the Butletin of the American Iron and Steel Association say:
By a coincidence we are just in receipt of a letter from a high American authority upon the subject treated of in Sir Henry Bessemer's reply to Mr. Seebohm. This letter is from Mr. Wm. F. Durfee, of Bridgeport, Conn., an engineer and metallurgist of acknowledged ability who also subject the acknowledged ability, who also enjoys the high honor of having made the first steel by the Bessemer process ever manufactured in this country. His letter confirms Sir Henry Bessemer's declarations that Besse-mer steel has been used and is now used as a substitute for the best crucible steel. It is as follows:

To the Secretary of the American Iron and
Steel Association.—Dear Sir: I note in the
Bulletin of October 8th an extract from an

English paper calling attention to the in-creasing employment of Bessemer steel for "uses hitherto served by crucible steel."

After enumerating a long list of articles which have been made with success from Bessemer steel, the English writer says: "Nor has cutlery itself been found too hard a test; for this special steel has been made even into razors, with decidedly good results." sheets and wire rods; indeed, in Shropshire wire rods generally the last ten days has witnessed a decided revival.

At Birmingham on October oth there was a much more cheerful feeling than at the to the employment of Bessemer steel for a a great variety of uses to which it is well adapted is the ignorance which exists on the part of the majority of the consumers of steel relative to the matter of hardening and tempering. insist on having a steel so high in car-bon that, after hardening, the temper has to be drawn in order that the implement made

> my father for 15 years, to his entire satisfaction. Yours truly, W. F. DURFEE. BRIDGEPORT, CONN., October 10, 1884.

Laborers' Wages in Pittsburgh,-The Pittsburgh Commercial Gazette says: "At Phillips, Nimick & Co's mill the lowest Philips, Nimick & Co's mill the lowest wases paid are \$1.35 per day; Graff, Bennett & Co., \$1.35; Singer, Nimick & Co., \$1.30; J. Painter & Sons, Brown & Co., Hussey, Howe & Co., William Clark & Co. Shoenberger & Co., Miller, Metcalf & Parkin, Jones & Laughlins, Carnegie Brothers & Co., Moorhead & Co., Lindsay & McCutcheon and the Black Diamond Steel Works, \$1.25; W. D. Wood & Co., \$1.40."

left in that condition. As regards the quality of the tools named I will say that the jack-

knives are as good as any that ever came under my notice, and the razor was used by

A cable dispatch from Glasgow, dated the

Wholesale Hardware Prices, October 29, 1884.

••••	_
HARDWARE.	Hu Hu
Anvils. Eagle Anvils American	Ho
## Eagle Anvils American ## 10¢-dis 20 \$ Wright's 10 @ 104¢ Armitage's Mouse Hole 944¢ @ 94¢ Armitage Mouse Hole, Extra 114¢ Trenton 94¢ Wilkinson's 104¢ I, & Riley Carr, Patent Solid 116¢	Q. S Bar Spo
Wilkinson's. 1046 1. & Riley Carr. Patent Solid. 1116 Anvil Vise and Drill. disconding the Millers Falls Co., \$18.00. dis 20 % Chency Anvil and Vise. dis 25 6	Cor Am Bar
Willers Falls Co., \$18.00. dis 20 % Cheney Anvil and Vise. dis 25 % Apple Parers.	Bar Bar Am Un
Advance	Em But
Gold Medal	She She Rea
Little Star \$\psi\$ doz \$5.50 New Lightning \$\psi\$ doz \$7.00 Orlole \$\psi\$ doz \$7.50—dis 30 \$\psi\$	Res
Penn	В
Turntable, Improved \$\psi\\ doz \$5.50 \\ \psi\\ waverly \$\psi\\ doz \$5.00\\ \psi\\ white Mountain \$\psi\\ doz \$5.50\$	Uni Sar Hot
Chency Anvil and Vise	Pec B Wr
"878" \$\frac{1}{2}\$ doz \$5.75 878" \$\frac{1}{2}\$ doz \$5.75 878"	Cas Cas
Patent Solid Head	Fas Loo Loo
Imitation Jennings Bits (old list)	Loo Par May
Expansive Bits, Clark's small, \$18; large, \$28dis 25&10 f Expansive Bits, Ives' No. 4, per doz., \$60dis 25&10 f Expansive Bits, Blake's.	Loo
Expansive Bits, Derby, \$17 and \$26. dis 40&10 \$ Expansive Bits, Ansonia. dis 25 \$ Hollow Augers, Ives'. dis 25&10 \$ Hollow Augers, French Swift & Co. dis 25&10 \$	Fas Fas Fas Loo
Hollow Augers, Douglass' Hollow Augers, Bonney's Adjust, Fdz. \$48dis 40&10 \$ Hollow Augers, Stearns' Adjust, Fdz. \$48dis 20&10 \$	Loo Tab Insi Insi
Hollow Augers, ives Expansive, each, 4.50—dis 20 g Hollow Augers, Universal Expan, each, 4.50—dis 20 g Wood's	Loo Loo Bro Spri
Gimlet Bits, Diamond. \$\\\\$\ \docs\\$ doz. \$\\\$1.10, \dis 25&10\\\\$\\\$\ \gequip \text{Gimlet Bits, 'Bee'} \text{dis 45}\\\$\\\$\ \gequip \text{Double Cut Gimlet Bits, Shepardson's. \text{dis 45}\\\$\\\$\ \gequip Double Cut Gimlet Bits, Ct. Valley Mfg. Co. \dis 30&10\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$\\\$	Ge Un Un An
Double Cut Gimlet Bits, Hartwell's. dis 60 g. Double Cut Gimlet Bits, Douglass' dis 40 g. Double Cut Gimlet Bits, Ives dis 50 g.	Be Un Be
Syracuse Twist Drill Co., Wood Drills	Bu En Ac
CHommedieu's Ship Augers Clis 15 Snell's Ship Augers Clis 15 Snell's Ship Augers Clis 15 Snell's Ship Augers Clis 16 Snell's Ship Augers Clis 10 Snell's Ship Augers Snell's Ship Augers Snell's Sne	Blin Blin Blin
Patent Sewing, Long\$1.20 \$\pi\$ doz.—net Patent Peg, Plain Top\$10.00 \$\pi\$ gross—dis 40&10 \$\pi\$ Patent Peg, Leather Top\$12.00 \$\pi\$ gross—dis 40&10 \$\pi\$ A wile. Brad Nets. &C.	Blin Blin Blin
Awis, Sewing, Common	Blin Blin Blin
Awis, Shouldered Brad. \$2.70 \times gross-dis 25&10 \times Awis, Handled Brad. \$7.50 \times gross-dis 25&10 \times Awis, Handled Scratch. \$7.50 \times gross-dis 25&10 \times Awis, Socket Scratch. \$3.50 \times doz-dis 25	Blin Blin 45 Blin
Aiken's Sets, Awis & Tools \$\pi\$ dos. \$10.00 - dis 50&10 \$\frac{1}{2}\$. Millers Falls Adj. Tool Handles \$\pi\$ dos \$12 - dis 25 \$\frac{1}{2}\$. Fray's Adj. Tool Handles, No. 1 \$\pi\$ dos \$12 - dis 25 \$\frac{1}{2}\$. Fray's Adj. Tool Handles, No. 2 \$\pi\$ dos \$12 - dis 25 \$\frac{1}{2}\$.	Nor #9 Shej
Brad Sets, No. 42, \$10.50; No. 43, \$12.50dis 70&10&5 % Brad Sets, Stanley's Excelsior, No. 1, \$7.50. \(\) dis 35&10 \$\frac{1}{2}\$	Clar 8.
A xes.—Best grades. Regular	Hun Brac Beat
Steel Pole, Bronzed add 1.00 Steel Pole, Bronzed add 5.0 Full Polished add 50 Beveled 50	New
A xes.—Best grades. Begular. Double Steel, Bronsed. Steel Pole, Bronsed. Beylar. Double Bit Axes. Regular, Bronsed. Bouble Bit Axes. Regular, Bronsed. Bouble Bit Axes. Regular, Bronsed. Bouble Bit Axes. Beylar, Bronsed. Bouble Bit Axes. Bouble Bit Axes. Beylar, Bronsed. Bouble Bit Axes. Bouble Bit Ax	Mess Ame
Full Folianet	Lym No. No.
Axles.—Common	Sard Star Spra
Balances	Univ
Hand, White Metal	Char
Gong, Yankee	F. E. Do Ph
Crank, Cone's dis 10 s Crank, Connel's dis 15&10 s Lever, Sargent's dis 55&10 s	Mu G.
Lever, Taylor's Japanned. dis 25&10 \$ Lever, R. E. M. Co. s. dis 50&10&2 \$ Lever, Reading. dis 25&10&10 \$	G. Eley U. M U. M U. M U. M
Pull, Brook 8. Pull, Western. dis 25&10 8. Call dis 40 8. Cow. Common Wrought dis 60&10 8.	Colt
Cow, Western Sargent's new list dis 20210 5 Cow, Kentucky "Star" dis 20210 5 Cow, Kentucky "Star" dis 20210 5 Cow, Kentucky Sargent's new list dis 20210 25	Rim
Cow, Dodge, Genuine Kentucky, new list— Nos. 1 14 2 3 4 5 6 7 Hog 4 410,00 8,00 8,00 8,00 6,00 5.00 4.00 8,00 2,50 5.00 dis 70 \$ 20w Toyan Star	Horn
#10.00 8.00 6.00 6.00 6.00 2.00 8.00 4.00 8.00 4.00 8.00 4.00 8.00 4.00 8.00 4.00 8.00 4.00 8.00 4.00 8.00 8	Woo Cast Cast
Blacksmiths Common Pattern. dls 20 % Molders dls 20 % Molders dls 20 % Hand Bellows. dls 20 %	Sock Bulli Ca Biass
Belting, Rubber.—Standarddis 7025 % Extra	Biance Myst
Farm Bells. \$\\$ 3.34 \(\) \$\\$ Steel Aloy Church and School Bells. \$\\$ \\$ \\$ 3.54 \(\) \$\\$ Steel Aloy Church and School Bells. \$\\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$ \\$	Cott. Garl Quee Quee King
Bit Holders. Extension, Barber's	Can Bed. Plate
Diagonal	Shall Deep Yate
Excelsior	Pays Ca Hum
Van Sand's Old Pattern. \$9 \ \text{gro.} -\text{dis 20 \ \frac{5}{2}} \ \text{Washburn's Old Pattern.} \text{Be \ \text{gro.} \text{merriman's.} \text{he \ \text{gro.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \text{new Bits.} \qua	Sarge Hote Peck Ch Trac
Security Gravity	Trac
Blocks. &c	Gern Gern Engl
Bolts Cast Iron Barrel, Square, &cdis 60&10 \cdot 10 \cdot 5 Cast Iron Shutter Bolts	Ame Cove Mene
Bolte Cast Iron Barrel, Square, &c	Onei Galvi Jack
Wr't Shutter, Brass Knob, Stanley's list.dis 25&10&10 \$ Wrought Shutter, Sargent's listdis 55&10&10 \$ Wrought Sunk Flush, Sargent'sdis 60&10 \$	Ch Whit Red.
Wrought Sunk Flush, Stanley's	Blue White Ch Sock
Carriage, Philadelphia	Sock Sock Sock Sock
Tire, Eagle, Phil., list Oct. 16, '84	Sock Tang Tang
Stove, R. & E. Mfg. Co dis 60 x Stove, R. & E. Mfg. Co dis 60 x Plow dis 60 x	Tang Cli
Plow, R. B. & W.	Iron, Iron, Iron,
Wr't Shutter, all Iron, Stanley's list. dis 50&10&10 Wr't Shutter, Brass Knob, Stanley's list. dis 55&10&10 Wrought Shutter, Sargent's list. dis 65&10&10 Wrought Sunk Flush, Sargent's dis 60&10 dis 60&10 Wrought Sunk Flush, Stanley's. dis 60&10 Wrought Sunk Flush, Stanley's. dis 60&10 Wrought B. K. Flush, Stanley's. dis 60&10 Wrought B. K. Flush, Stanley's. dis 65 Fire, Common, idl Ist. dis 75 Carriage, Common, list June 10, '84.dis 75&10@75&12½ g dis 75 Carriage, Philadelphia dis 75 Carriage, Philadelphia dis 70&5 Tire, Say State,' list Fob. 28, 1883. dis 70 Tire, R. B. & W. Philadelphia list Oct. 18, 1884. dis 60 Stove, R. B. & W. dis 60 Stove, R. B. & W. dis 60 Flow dis 60 Stove, R. B. & W. dis 60 Shorline dis 70&5 67&2.10 Borrax loprish Angular Finitips, with Augers. 7.00 dis 60 Fhillips, with Augers. 7.00 dis	Iron, Iron,
Phillips, with Augers	Saw Cli

ulesale naluw	d
Bow Pins Humason, Beckley & Co.'s, Nos 1 and 2dis 60 % Humason, Beckley & Co.'s other Nos	
Bow Pins Bumason, Beckley & Co.'s, Nos 1 and 2	
BFRCCes	Bos Seli Am The
Common Bail, American	We Cor Cal
Common Ball, American dis 55 x Amidon's dis 50 x Bartholomew's, Nos. 25, 27, 20 dis 50 x Bartholomew's, Nos. 117, 118, 119 dis 60 x Barker's Imp'd dis 60 x Barker's Imp'd dis 60 x Amidon's Corner Brace dis 30 x 10 x	Ben Ben Ben
Brackets, dis 50&10&10	Ben Exc Coo
Reading Rosette	J. S C Bra Bar
Sargent's. dis 60&10 g Hotchkiss' low list. dis 30 g Humason, Beckley & Co.'s. dis 70 g	Clo Bra Wa
Butts	Cas
Fast Joint, Narrow dis 60&10 % Fast Joint, Broad dis 60&10 % Loose Joint dis 70@70&10 % Loose Joint, Japanned dis 70@70&10 %	Hot Hot Rub
Loose Joint, Japanned with Acornsdis 70@70&10 \$ Parliament Butts	Silv Whi C
## Butts Wrought Brass.	Wor D
Fast Joint, Broad	Emi Lea Brad D Tori
Loose Pin, Wrt. dis 60&73&10 5	Gra; Bee
Bronzed Wrought Butts	No No No Star
Consider the Con	No No No No Vict
Bommer's dis 25 5 Buckman's dis 25 5 Buckman's dis 25 5 Empire dis 60 5 Acme dis 70 5 Climax dis 500:10 5 Blind Butts, Parker dis 76:22 5	Chai Phil Cow Rub
Acme dis 70 st Climax dis 50&10 st Bilnd Butts, Parker dis 70 st Bilnd Butts, Parker dis 70 st Bilnd Butts, Parker dis 70 st Bilnd Butts, Seymour dis 70 st Bilnd Butts, Lull & Porter dis 80 st Bilnd Butts, Lull & Porter dis 80 st Bilnd Butts, Lull & Porter dis 90 st Bilnd Butts, Buffer, dis 90 st Bilnd Butts, Buffer, dis 70 st Bilnd Butts, Clark's, Nos. 1, 3, 5 dis 70 st Bilnd Butts, Buffer, Son 1, 3, 5 dis 70 st Bilnd Butts, Sargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Sargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Bargent's, Nos. 1, 3 dis 70 st Bilnd Butts, Beading's Gravity dis 70 st Bilnd Butts, Beading's Gravity dis 70 st	Here Share Doug
Blind Butts, Clark's, Nos. 1, 3, 5	Meri Wat L. & Brad
Blind Butts, Shepard's "Noiseless," Nos. 50, 60, 65, 45 and 55	Brac Adju Di Blac Blac Brea
5	Brea Brea Brea
5	Rate Rate Rate Rate
Beatty's	Whi \$12 Wils Auto Dr
Calipers	More More Dan E
Messenger's Comet.	Mon Nati Stan Fam
Star	Acm Triu Es
Universal. \$\P\$ dos \$3.00, dis 35&5 \% \\ Domestic. \$\P\$ dos \$2.50, dis 45 \% \\ Champion. \$\P\$ dos \$2.50, dis 65 \% \\ Caps-Percussion, \$\P\$ 1000.	Flou For I En War
Caps—Percussion, # 1000. Hicks & Goldmark's F. L. Waterproof, 1-10's	Bras Es Door Bras Woo
Pistol Waterproof, 1-10's. .75¢ Musket Waterproof, 1-10's. .80¢ G. D. & S. B. .35¢, dis 10 % Eley's E. B. .60¢ net Pisto's D. Waterproof. Control Fire. .60¢ net	Fan Bohr
G. D. & S. B. 33¢, dis 10 % Eley's E. B. 60¢ net Eley's D. Waterproof, Central Fire 51.50 U. M. C. F. C. trinmed 50¢ dis 15&10 % U. M. C. F. L. ground 70¢ dis 15&10 % U. M. C. Double W. Froof. 11.40 dis 10&5 % Double W. Aterproof, in 1.10°s. 13.40 dis 10 % 5 % Musket, in 1.10°s. 80¢, dis 8394 % Cartridges.	Star. Frar. West Anch Meta
Double Waterproof, in 1-10's. \$1.40 \ \ \ \text{dis 10.5} \ \text{dis 304.5} \ \text{Cartridges} \ \text{Bim.} \ \text{List of Jan. 1, 1884—dis 50&10\text{a00.5}} \end{aligner}	Meta Cork J. So J. So J. So
Central Fire " dis 33% 40 % Cards	Self- Self- Self- Fe
Carpet Stretchers. Cast Steel, Polished	J. & Moss Files New
Socket # doz #2.50, dis 25 % Bullard's dis 25 % Bullard's dis 25 % Carpet Sweepers. Blasell No. 5 # doz #17.00 Blasell No. 7 New Drop Pan # doz #19.00 Blasell No. 13 Hall Sweeper # doz #42.00	Knoz Knoz
Cottage	Eagle Crow Crow Ame
King # dos \$30.00 Casters.	Gene Crow dos Shep
Plate	Shep Shep Clark Com
Sartin's Patent (Phoenix)	Fig. Para Fo
Hotchkins	Hav.
Frace, 7-10-2	Burn No do:
Peck Stow & W. Co	Ga Mark Wire
Onelda Halter Chain (old Hss). dis 45 Sialvanized Pump Chain \$ 8 6% cock Chain, Irou dis 70 Sack Chain, Brass dis 65&10 \$	" Dia
Duckda Halter Chain (old list)	Doub Doub "Bee GI
ilie. # gro 60¢ net ilie. # gro 139¢ net ilie. # gro 60¢ praming. # gro 60¢ p	Fami Fami
tocket Framing and Firmer, Buck Bros. dis 50 % focket Framing and Firmer, Berrill. dis 65&10 % focket Firmer, Framing, &c., L. & I. J. White. dis 25&5 % langed Firmers. dis 45&5@50 % fanged Firmers. Butcher's. 48.75 @ 35.00	Sarge
ranged Firmers, Spear & Jackson's	U. M. U. M. U. M. U. M. U. M. U. M. Eley'
ron, Adjustable, Lambert's	suey'
ron, Adjustable, Hammer'sdis 15 % ron, Adjustable, Stearns'dis 20&10 %	H'
Anged Firmers, Buck Bros. dis 30 s Clamps, ron, Providence Tool Co.'s Wrought Iron. dis 25 s ron, Adjustable, Gray's. dis 20 s ron, Adjustable, Lambert's. dis 20 s ron, Adjustable, Snow's. dis 40&5 s ron, Adjustable, Snow's. dis 40&5 s ron, Adjustable, Hammer's. dis 15 s ron, Adjustable, Hammer's. dis 20&10 s ron, Captingto, Markey, Sargent's. dis 60&10 s ron, Captingto, Markey, Sargent's. dis 60&10 s ron, Eberhard Mfg. Co. dis 40&5 s sw Clamps. See Vises Clips, Axles. dis 60&10 s Gorway or Best. dis 60&10 s Gorway or Gorway or Best. dis 60&10 s Gorway or Gorway or Best. dis 60&10 s Gorway or Gorway or Gorway or Gorway or Best. dis 60&10 s Gorway or Gorw	Griffi Star I Ha Cover Cover Cover

are Prices, U	
Cockeyes	
Cocks, Brass. dis 60 Backing. dis 60 Globe. dis 60 Plain Bibbs. dis 60 Ale and Beer. dis 60 Coffee Mills. dis 60 Roard and Box. dis 450	
Coffee Mills. Board and Box	
Compassesdis 60&10 5	
Dividers	
J. Stevens & Co.'s Calipers and Dividersdis 25&10 \$\frac{Coopers'}{Coopers'}\$ Tools. Bradley's	
Coppers Tools. dis 20 g Bratley's. dis 20 g Bratley's. dis 25 g L. & I. J. White dis 25 g L. & I. J. White dis 20 g Albertson Mfc. Co dis 25 g Albertson Mfc. Co dis 35 g Corkscrews. dis 30 g G Corkscrews. dis 40 g Humsson & Beckley Mfg. Co dis 40 g	
Cornactrews. Humson & Beckley Mfg. Co. dis 40 % Clough's Patent. dis 33% % Corn Knives and Cutters. Bradley's. dis 10 % Wadsworth's. dis 25 % Crow Bars.	
Cast Steel Points # n 5¢ Iron, Steel Points # n 4¢ Curry Combs. # n 4¢ Fitch's dis 50&10 5 Hotchkiss, Novelty, new list, July, 1880. dis 33&47	The Party of the P
Iron, Steel Points.	I I
American Table	-CNHO
Dividera See Compasses Dog Collara dis 30&10 % Embossed Git dis 40 % Leather dis 40 % Brass dis 40 %	SILVO
Leatner	1777
Gem (Coll): No. 1, Large Japanned	MANIMA
No. 5, Screen Door size, \$\pi\$ (08 \$1.50) No. 5, Screen Door size. \$\pi\$ dos 2.00 dis No. 6, Medium. \$\pi\$ dos 2.75 (00 \$\pi\$) No. 7, Large. \$\pi\$ dos 4.00) Victor (Coil)	HJHH
Philadelphia	SGCCC
Hercules dis 25 e 20 dis 26 e 20 dis 2	N. H.
	B
Adjustable Handle. dis 20 % Drills and Drill Stocks. Blacksmiths' each, \$2.50, dis 20 % Blacksmiths' Self-Feeding each, \$7.50, dis 20 % Breast, P. S. & W dis 20&1.0 % Breast, Wilson's dis 20 % Breast, Wilson's dis 20 % Breast, Wilson's dis 25 % Breast, Wilson's each, \$3.00 dis 25 %	8
Breast, Hotchkiss' dis 20 g Breast, Wilson's dis 25 g Breast, Millers Falls each, \$8.00 dis 25 g Breast, Bartholomew's each, \$2.50 dis 25±10 g Batchet, Merrill's dis 20 g Ratchet, Mirmey's dis 20 g Ratchet, Whitney's dis 20 g Ratchet, Whitney's dis 20 g Ratchet, Moore's Triple Action dis 26 g Whitney's dis 20 g Whitney's Hand Drill, Plain, \$11.00; Adjustable, \$12.00 dis 20 g Wilson's Drill Stocks dis 20 g	Y
	L
Morse's Beach Patenteach, #8.00, dis 20 5 Morse's Adjustableeach, #7.00, dis 20 5	C
Page Beaters.	S
Regular numbers	0
ware.	P
Eacuteneon Fine dis 60 s	A
Wood	H
Anchor Lock dis 45 dis 45 dis 45 dis 45 dis 46 dis 46 dis 46 dis 46 dis 46 dis 76 dis 46 dis 76 dis 46 dis 76 dis 46 dis 76 dis 46 dis 4	GGGG
leif-Measuring, Enterprise \$\Phi\$ dos \$36.00—dis 20&10 \$\forall \text{Measuring}, Lane* \(\bar{\text{Measuring}}, \bar{\text{Measuring}}, \bar{\text{Victor}} \). \$\Phi\$ dos \$36.00—dis 20&10 \$\forall \text{Measuring}, \bar{\text{Victor}} \). \$\Phi\$ dos \$36.00—dis 25&10 \$\forall \text{Felloe Plates}\$ \$\Phi\$ so \$10\$\psi\$, dis 30 \$\forall \text{Files}\$.	GGGRR
. & Riley Carr Horse Rasps	RRRP: Sc
Stabe	H
Prown, 45 (n., 83.60; 6-in, 84.00; 8-in., 86.50 each, dis 35 % Trown Jewel	Sc Pl
Trown Hand Fluter, Nos. 1, #15; 2, #12.50; 3, #10.00, \$\psi\$ dos. \tag{dis 30} \tag{dis 40} \tag{dis 30} \tag{dis 40} \tag{dis 31.1} \tag{dis 40} \tag{dis 31.00} \tag{dis 31.6} \tag{dis 30} dis 30	H. M. Gi
	St
aragon. ♥ dos \$3, net Forks. lay, Manure and Spading	Gi Ri Gi
Urnished list as follows	BiBiCCCC
larking, Chapin'sdis 55&10 g	Be
Gimlets. dis 50&10 % iall and Spike dis 50&10 % Eureka "Gimlets dis 40&10 % Diamond "Gimlets dis 40&10 % ouble Cut, Shepardson's dis 40 % dis 40 % dis 40 %	CHCCWW
ounie Cut, Ives" dia 45&10 % ounie Cut, Douglass' dia 40 % Bee " # gross \$12, dia 20 % Glue Pets. dia 40 %	WPI Tawww
Amily L. F. & C. 's "Handy" dis 40 \$	WGWH
Vire. Wheeler, Madden & Co. dis 10&10 5 10 5 10 5 10 5 10 5 11 miets. dis 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10	ALCIC
7. M. C. P. b., 788. 4.90 Gley's B. E. 2.00 Gley's P. E. 3.00 Hack Saws. 3.00	ERPVING
Hack Saws. Griffin's Hack Saws, complete. dis 40&10 5 iriffin's Hack Saws, Blades only dis 20&10 \$ tar Hack Saws and Blades. dis 25 \$ Halters. over's Pat. Rope. dis 50&5 5 over's Pat. Hemp Horse and Cattle Ties. dis 50&5 5 over's Pat.	A.C.C.N.B.

Ķ	Hammers.
E .	Maydole's dis 20@25 Cheney's, new list, March, 1883 dis 20@15 Hartford Hammer Co.'s Nall Hammers dis 25@25&5 Kip's dis 35
200	
6 16 1	Hamisson a Deckiey Gle5
6	Warner & Nobles dis 10 Yerkes & Plumb dis 40 @ 40&5 Wilkingon's Smiths' 1146 & b. ne
6	Wilkinson's Smiths'
1	Providence Tool Co., Hand Cuffs, \$15.00 @ dozdis 10
6 50 5	Yerkes & Plumb
N 00 0	Nos
2000	Roggin's Latches
10000	Jap'd Store Door Handles—Nuts, \$1.62; Plate, \$1.10; no Plate, \$0.88ne
	Wrought Chestdis 70
2000	Flush Chest. dis 70
0000	Saw and Plane
	Boynton's Centennial Saw Handles30¢, dis 25 Hammer and Hatchetdis 20
	Towers
	Apple Firmer Chisel, large gross 5.00 Apple Firmer Chisel, assorted gross 5.00
	Socket Firmer Chisel, assorted 9 gross 3.00 8
	File, assorted
	Auger, large
	Hammer and Hatchet. dis 20 Brad Awi \$\tilde{g}\$ gross \$5.0\$ Hickory Firmer Chisel, large \$\tilde{g}\$ gross \$5.6\$ Hickory Firmer Chisel, large \$\tilde{g}\$ gross \$5.00\$ Apple Firmer Chisel, large \$\tilde{g}\$ gross \$5.00\$ Apple Firmer Chisel, large \$\tilde{g}\$ gross \$5.00\$ Socket Firmer Chisel, large \$\tilde{g}\$ gross \$5.00\$ Socket Firmer Chisel, assoyted \$\tilde{g}\$ gross \$5.00\$ Socket Firmer Chisel, assoyted \$\tilde{g}\$ gross \$5.00\$ File, assorted \$\tilde{g}\$ gross \$5.00\$ \$25.10\$ gross \$5.00\$ Auger, assorted \$\tilde{g}\$ gross \$7.50\$ Auger, large \$\tilde{g}\$ gross \$7.00\$ \$25.10\$ gross \$5.00\$ File, assorted \$\tilde{g}\$ gross \$7.00\$ \$25.10\$ gross \$7.
	Rarn Door New Fredend dis 60&10&10
1	Touth Last Deletion Wood Track
	Reed's Steel Arm. dis 40 Challenge dis 50
١	"Champion" Medina Mfg Co\$15.00, dis 50&10 general form of the first sterling Improved (Anti-Friction)
ı	Challenge. dis 50 "Champion" Medina Mfg Co. \$15.00, dis 50x10 Sterling Improved (Anti-Friction) dis 65x10 Double Cut, Hartwell's Victor, No. 1, \$15; No. 2, \$16.50; Ne. 3, \$18. dis 3334 Charitree No. 1, \$15; No. 2, \$16.50; Ne. 3, \$18. dis 534
I	Kidder's
I	The "Boss"
1	CronkNo. 4, \$12; No. 5, \$14.40; No. 6, \$18, dis 50&5; Architect
-	Victor, No. 1, \$15; No. 2, \$16.50; No. 3, \$18. dis 333; Cheritree dis 50. Kidder's dis 50. Kider's Patent. 5 in. \$12; 54 in. \$13, 0, 48 40 Cronk. No. 4, \$12; No. 5, \$14.40; No. 6, \$18, dis 50. Kider's dis 50. Kider
1	Harness Snaps. Anchor (T. & S. Mig Co.). Alenshaw's, list of 1½ changed to \$14.00. Judd's, list of 1½ changed to \$14.00. dis 65 Judd's, list of 1½ changed to \$14.00. dis 65 Fitch's (Briscol), list of 1½ changed to \$14.00. dis 65 dis 103
1	Henshaw's, list of 11/4 changed to \$14.00dis 65 judd's, list of 11/4 changed to \$14.00dis 65 j
1	Fitch's (Bristol), list of 11/6 changed to \$14.00dis 65 9 Hotchkiss dis 15 9 Andrews' dis 50 9
۱	Andrews'
ı	German, Sargent's new list. dis 60&10 Covert. dis 50 dis 5
ı	Covert. dis 50 Covert. New Patent, new list. dis 25 Covered Spring, new list, Oct., 1882 dis 60&10 Mencely's Pat. Safety (Old German list). dis 60&10 Mencely's Imp. German (Old German list). dis 60&10
I	Meneely's Pat. Safety (Old German list)dis 50 9 Meneely's Imp. German (Old German list)dis 60&10 9
ı	Isaiah Blooddis 35 @ 40 5
I	Lathing, Nos. 1 2 3 # doz 7.50 8.00 8.50
ı	
I	Shingling, Nos. 1 2 3.
I	Chi-W W 100 20 doe 89 00 89 50 60 00
l	Lathing Nos. 1 2 3
ı	Shingting, Nos. 1 2 3. \$\psi\$ dos \$0.00 \$0.00 \$0.00\$ Claw, Nos. 1 2 3. \$\psi\$ dos \$0.00 \$0.00 \$0.00\$ Clos \$0.00\$ C
ı	Claw Nos. 1 2 3
١	
ŀ	No. 1. \$12. Boston Pattern, \$18.
J	C. Hammond & Sondin 45 @ 45&5 % Shingling, Nos. 1 2 3 dos \$6.00 \$8.50 \$0.00
ď	CHILDRING, Mos. 1 & S
	Lathing, Nos. 1 2 3 # dos 8.00 8.50 9.99
	Simmons
	Simmons
	Simmons. Shingling, Nos. 0 1 2 3. \$\psi\$ doz \$77.50 \$8.00 \$8.50 \$9.00 \$0.00 \$12 \$3.\$\psi\$ doz \$87.50 \$8.00 \$8.50 \$9.00 \$0.00 \$1.00 \$
	Simmons. Nos. 1 2 3 \$\pi\$ doz \$7.50 \$8.00 \$8.55 \$8.00 \$1.80 \$8.51 \$8.00 \$1.80 \$8.50 \$8.
	Simmons. Nos. 1 2 3 \$\pi\$ doz \$7.50 \$8.00 \$8.55 \$8.00 \$1.80 \$8.51 \$8.00 \$1.80 \$8.50 \$8.
	Simmons. Nos. 1 2 3. \$\psi\$ doz \$7.50 \$8.00 \$8.50 \$8.50 \$8.50 \$8.50 \$1.8
	Simmons, Nos. 1 2 3 \$\psi\$ doz \$7.50 \$8.00 \$8.50 \$8.00\$ Shingling, Nos. 0 1 2 3 \$\psi\$ doz \$7.50 \$8.00 \$8.50 \$8.50 \$8.00\$ Claw, Nos. 0 1 2 3 \$\psi\$ doz \$8.00 \$8.50 \$8.50 \$8.00\$ Lathing, Nos. 1 2 3 \$\psi\$ doz \$8.00 \$8.50 \$8.50 \$8.00\$ Eroad, Nos. 1 2 3 \$\psi\$ doz \$8.00 \$8.00 \$8.50 \$8.00\$ Clims, Nos. 1 2 3 \$\psi\$ doz 16.00 \$18.00 \$10.00 \$12.00 \$14.00\$ Firoad, Nos. 6 6 7 8 \$\psi\$ doz 16.00 \$18.00 \$20.00 \$20.00\$ Clims, Nos. 1 2 3 \$\psi\$ doz 8.50 \$80.00 \$6.50 \$7.00\$ Cathing, Nos. 1 2 3 \$\psi\$ doz 8.50 \$6.00 \$6.50 \$7.00\$ Cathing, Nos. 12 3 \$\psi\$ doz 8.50 \$8.00 \$8.50 \$8.00\$ Lathing, Nos. 12 3 \$\psi\$ doz 8.00 \$8.50 \$8.00\$ Lathing, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$8.00\$ Lathing, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$ Lathing, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$ Lathing, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$ Half, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$ Half, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$ Half, Nos. 1 2 3 \$\psi\$ doz 8.00 \$8.50 \$9.00\$
l.	Simmons, Nos. 12 3. \$\psi\$ dos \$7.50 \$8.00 \$8.50 \$0.00 \$0.50 \$1.20 \$1.00
l.	Simmons, Nos. 12 3. \$\psi\$ dos \$7.50 \$8.00 \$8.50 \$0.00 \$0.50 \$1.20 \$1.00
	Simmons, Nos. 1 2 3. \$\psi\$ dos \$ 8.50 \ 8.5
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	Simmons, Nos. 1 2 3. \$\psi\$ dos \$ 8.50 \ 8.5
	Simmons, Nos. 01 2 3. \$\psi\$ dos \$\frac{8}{2}\$\$ \$6.00, \$8.55 \$6.00 \$0.00 \$1.00
	Simmons. Nos. 0 1 2 3. \$\psi\$ doz \$7.50 \$8.00 \$8.50 \$8.00 \$1.00 \$1.20 \$1.00 \$1
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	Simmons, Nos. 12 3. P doz \$7.50 \$8.00 \$8.50 \$0.00 \$1.5
	Simmons. Nos. 0 1 2 3. \$\psi\$ doz \$7.50 \$8.00 \$8.50 \$0.00 \$1.50 \$8
	Simmons. Nos. 0 1 2 3. \$\psi\$ dos \$\frac{8}{2}\$\$ \$50, \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00
	Simmons, Nos. 0 1 2 3 P doz 37.50 \$5.00 \$6.50
	Simmons, Nos. 0 1 2 3. \$\psi\$ dos \$ 7.50 \$8.00 \$8.55 \$9.00 \$0.50 \$8.10 \$8.50 \$9.00 \$1.50 \$8.00 \$8.50 \$9.00 \$1.50 \$8.00 \$8.50 \$9.00 \$1.50 \$8.00 \$8.50 \$9.00 \$1.50 \$8.00 \$8.00 \$8.00 \$8.00 \$8.00 \$1.50 \$9.00 \$1.50 \$
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	Simmons, Nos. 12 3. \$\psi\$ dos \$7.50 \$8.00 \$8.50 \$9.00 \$0.50 \$1.20 \$1.00 \$1.20 \$1.00
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	Simmons, Nos. 0 1 2 3. \$\psi\$ dos \$7.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8
	Simmons, Nos. 12 3. \$\psi\$ dos \$ 8.50 \$0.00 \$0.50 \$0.00 \$0.50 \$0.00 \$1.2 \$0.\$\psi\$ dos \$ 8.50 \$0.00 \$0.50 \$0.00 \$1
	Simmons, Nos. 12 3. \$\psi\$ dos \$ 8.50 \$0.00 \$0.50 \$0.00 \$0.50 \$0.00 \$1.2 \$0.\$\psi\$ dos \$ 8.50 \$0.00 \$0.50 \$0.00 \$1
	Simmons, Nos. 0 1 2 3. \$\psi\$ dos \$7.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8
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	Simmons, Nos. 01 2 3. \$\psi\$ dos \$ 8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8.50 \$8.00 \$8
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	Simmons, Nos. 01 2 3. \$\psi\$ dos \$\frac{8.50}{8.50}\$ 8.50 8.00 8.50 8.00 8.50 8.00 8.50 8.00 8.50 8.00 8.0
	Simmons. Nos. 0 1 2 3. \$\psi\$ dos \$ 8.50 8.00 8.50 8.00
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	Simmons, Nos. 0 1 2 3. \$\psi\$ dos \$\frac{7.50}{8.00}\$ 8.55 8.00.00 8.55 \$\simmons\$ \text{Simmons} \text{Nos. 0 1 2 3. \$\psi\$ dos \$\psi\$ 8.50 8.00 8.50 9.00 \$\text{Rodo}\$ \text{Nos. 0 1 2 3. \$\psi\$ dos \$\psi\$ 8.50 9.00 9.50 \$\text{Lathing, Nos. 0 1 2 3. \$\psi\$ dos \$\psi\$ 8.00 8.50 9.00 \$\text{Rodo}\$ \text{Nos. 5 6 7 8. \$\psi\$ dos \$\psi\$ 8.00 8.50 9.00 \$\text{Rodo}\$ Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 18.00 2.00 22.00 \$\text{Color. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 18.00 2.00 22.00 \$\text{Color. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 6.50 7.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 6.50 7.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 6.50 7.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 6.50 9.00 \$\text{Claw. Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Claw. Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Claw. Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Claw. Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Claw. Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 8.50 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 9.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing, Nos. 1 2 3. \$\psi\$ dos \$\psi\$ 6.00 \$\text{Lathing,

MAMMA	
ANNA	Horse Shoes.
1	R. I. Horse Shoe Co., Perkins' lmp.
× 0%	Walker's Forged, Light, Med. or Heavy
0%	Hose, Rubber.
et %	Ice Awls, Chisels, &c. 4doz \$3.00, dis 20 %
MMM	Novelty Ice Breakers. # doz \$0.25, dis 20 % White's Silding Head Picks. # doz \$2.50, dis 40 % Dunlars Ping Picks
	Wood Head Picks, Sargent's # doz \$1.25, dis 50&10 % Iron Head Picks, Sargent's # doz \$1.25, dis 50&10 % Iron Head Picks, Sargent's # doz \$1.25, dis 50&10 % Iron Head Picks, Pick in handle 28 doz \$1.25, dis 50&10 % Iron Head Picks in handle 28 doz \$1.25
et et	Combination Ice Loois 102 \$2.00 net
et	American, Crown and Stardis 45 % Gemdis 55 %
M M M W W	1ce Tougs. @ doz \$6.00, dis 25&10 \$ Family. @ doz \$2.75, dis 20 \$ Tought
MMMM	Kettles. Brass, 7 to 17 inches inclusive ₩ 70 28¢, dis 15 ≰
200	Brass, 7 to 17 inches inclusive \$\mathbb{P}\$ 28\$\circ\$, dis 15 \$\sqrt{8}\$ Brass larger than 17 inches \$\mathbb{P}\$ 32\$\circ\$, dis 15 \$\sqrt{8}\$ Enameled and Tea Kettles See Hollow-Ware
dis 40 %	Ames' Butcher Knives
d	Knives
K K	Table and PocketSee Cutlery Knobs.
et s	Knobs. Base, Rubber Tip
发发鬼	Door Por. Jap'd Same discounts as Door Locks.
K K K K	Furniture Plain
AMMAN	Hemacite Door Knobs, new list
MANA	Adles.
MMM	Melting, Monroe's Patent. \$\psi\$ dos \$4.00, dis 40 \$\sqrt{8}\$ Melting, P. S. & W dis 30&10 \$\sqrt{9}\$ Eberhard Mfg. Co dis 33% \$\sqrt{8}\$
0 % %	Lanterns. Tubular, Standard No. 0, # doz
W NA NA	Lasterns Tubular, Standard No. 0, \$\psi\$ doz \$7.50 Tubular, Standard No. 1, \$\psi\$ doz 9.00 Tubular, Lift Wire, No. 0, \$\psi\$ doz 9.00 Tubular, Lift Wire, No. 1, \$\psi\$ doz 0.50 Cuards for Tubulars, add \$\psi\$ doz 2.5 Tipping Tubular, \$\psi\$ doz 0.50 Folice, Small, \$\psi\$.00; Med., \$\psi\$.25; Large, \$\psi\$.75. dis 10 \$\psi\$ Forter's Tin R. R. \$10 0.18 Owl \$\psi\$ dis 29 \$\psi\$
AMMA	Tipping Tubular, # doz. 8.00 Police, Small, \$6.00; Med., \$7.25; Large, \$9.75. dis 10 \$ Porter's Tin R., \$10.
MMM	Owl
1843434	Lemon Squeezers. Porcelain Lined. \$\psi\$ dos. \$6.00, dis \$54.5 g\$ Porcelain Lined. \$\psi\$ dos. \$8.00, dis \$5.5 g\$ Wood. \$\psi\$ dos. \$8.00, dis \$5 g\$ Eureka, Tinned. \$\psi\$ dos. \$8.00, dis \$15 g\$ Eureka, Tinned. \$\psi\$ dos. \$8.00, dis \$10 g\$ Eureka, Tinned. \$\psi\$ dos. \$1.76, dis \$20 g\$ Eureka, Tinned. \$\psi\$ dos. \$1.76, dis \$20 g\$ Eureka, Tinned. \$\psi\$ dos. \$1.76, dis \$2.76,
	Eureka, Tinned. \$\\\\$ doz. \\$8.00, \\\\ dis 10 \xi\$ Dunlap's Improved\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	Townsend's Patent \$0.00 \(\psi \) doz, dis 334 \(\psi \) Jennings' "Star" \$3.00 \(\psi \) doz, net The "Boss" \$3.00 \(\psi \) doz \$4.00, dis 10\(\psi \) 10\
6	Lines. die 25410 «
6	Cotton Chalk
6	Masons' Linen, No. 3½, \$1.50; No. 4, \$2; No. 4½, \$2.50 . Net Masons' Colored Cotton
	Locks, Padlocks, Cabinet Locks, &c. Door Locks, Escutcheons, &c
	Locks, Padlocks, Cabinet Locks, &c. Door Locks, Escutcheons, &c
6	Barnes Mrg. Co. dis 40 % Yale Flat Key. dis 40 % Diets Flat Key. dis 30 %
	Round Key Latches dis 3314010 g
6	Cabinet, Eagle Changes made in list price of
	Cabinet, P. & F. Corbin. 1884, dis 45&2 % cash.
	Cabinet, P. & F. Corbin. 1884, dis 46&2 & cash. Cabinet, A. E. Deits. dis 30 & 40 & 50 & 50 & 50 & 50 & 50 & 50 & 5
	Cabinet, P. & F. Corbin. 1884, dis 46&2 & cash. 640 % Cabinet, A. E. Detts. dis 30 dis 46&2 & cash. 640 % Cabinet, Stotdard Lock Co. dis 30 % A. Cabinet, Stotdard Lock Co. dis 30 % A. Cabinet, Stotdard Lock Co. dis 30 % A. Cabinet, State Key Drawer. dis 30 % 40 % dis 40 %
	E. Many's "Extension Cylinder" \$10.50 \(\) doft net sarnes Mg. Co dis 40 \(\) Yale Flat Key dis 40 \(\) Yale Flat Key dis 40 \(\) Yale Flat Key dis 30 \(\) Stoddard dis 30 \(\) Stoddard dis 30 \(\) Langstroth \(\) Crane's dis 30 \(\) Langstroth \(\) Crane's dis 30 \(\) Langstroth \(\) Crane's dis 30 \(\) Langstroth \(\) Cabinet, Eagle Changes made in list price of Cabinet, Eagle Changes made in list price of Cabinet, Eagle Some numbers March 10, Cabinet, A. E. Detts dis 30 \(\) 40 \(\) Cabinet, S. Coddard Lock Co dis 30 \(\) 40 \(\) 30 \(\) Cabinet, Stoddard Lock Co dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Segle Trunk dis 30 \(\) Eagle Trunk dis 30 \(\) Eagle Trunk Ablock s dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Segle Trunk dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or "U. S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) Shepardson " or " S." dis 30 \(\) 40 \(\) 50 \(\)
	Cabinet, P. & F. Corbin. 1884, dis 46&2 x cash. Cabinet, P. & F. Corbin. 1884, dis 46&2 x cash. Cabinet, A. E. Detts
	Cabinet, P. & F. Corbin. 1884, dis 45&2 \$ cash. Cabinet, P. & F. Corbin. 1884, dis 45&2 \$ cash. Cabinet, A. E. Deits
	Cabinet, P. & F. Corbin. 1884, dis 46&2 \$ cash. Cabinet, P. & F. Corbin. 1884, dis 46&2 \$ cash. Cabinet, Stoddard Lock Co. dis 30&40 \$ cash. Cabinet, Stoddard Lock Co. dis 30&40 \$ cash. A. E. Deltz. Stoddard Lock Co. dis 30&40 \$ cash. Gallott, Stoddard Lock Co. dis 30&40 \$ cash. Gallott, Stoddard Lock Co. dis 30&5 \$ cash. Shepardson" or "U. S." dis 35 \$ cash. Gallott, Flat Key Drawer dis 40&10 \$ cash. Fallock B. Russell & Erwin. dis 40&10 \$ cash. Mallory, Wheeler & Co. Minute & Brittan Mg. Co. dis 40&2 \$ cash. Wm. Wilcox & Co. dis 40 \$ cash. Norwich Lock Co. dis 40 \$ cash. Cabinets, Wilcox & Co. dis 40 \$ cash. Gallott Mg. Co. dis 40 \$ cash. Romer's, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Nos. 20 to 506. dis 25 \$ cash. Cabinets, Cash. Cash. Cabinets, Cash.
	Cabinet, P. & F. Corbin. 1884, dis 16&2 & cash. Cabinet, P. & F. Corbin. 1884, dis 16&2 & cash. Cabinet, Stotdard Lock Co. dis 30 & A. E. Delts, Flat Key Drawer. dis 30g440 & Cabinet, Stotdard Lock Co. dis 30 & A. E. Delts, Flat Key Drawer. dis 30g440 & G. E. Delts, Flat Key Drawer. dis 30g440 & G. E. Delts, Flat Key Drawer. dis 30g440 & G. E. G.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Norwich Lock Co. Sagle. dis 25&2 ≤ ⊕ Misself & Grand Mfg. Co. dis 40 ≤ Eagle. dis 25&2 ≤ ⊕ dis 40 ≤ Eagle. dis 55&2 ≤ ⊕ Romer's, Nos. 200 to 505. dis 40 ≤ Eagle. dis 55 ≤ dis 65&2 ≤ ⊕ Fraim & Bro. List of 1883-84. dis 65&3 ≤ € Fraim & Bro. List of 1883-84. dis 50 ≤ Eagle. Socandinaviad. dis 50 ≤ Scandinaviad. dis 80 ≤ Lusare.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Norwich Lock Co. Sagle. dis 40 % Eagle. dis 25 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Wm. Wilcox & Co. Norwich Lock Co. Yale Lock Mfg. Co. 8
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Wm. Wilcox & Co. Norwich Lock Co. Yale Lock Mfg. Co. 8
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
6	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
6	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Yale Lock Mfg. Co. Seagle
6	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Lock Lock Co. Norwich Lock Co. Norwi
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Stagle
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Mfg. Co. Mis 25 & Mis 25 & Mis 35 & Mis 40 & Mis 65
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Norwich Mfg. Co. Mis 25 & Mis 25 & Mis 35 & Mis 40 & Mis 65
£ £	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Norwich Lock Co. Sagle. dis 40 % Eagle. dis 40 % Romer's, Nos. 0 to 91 dis 40 % Star' dis 10 % dis 10 % Star' dis 10 % Star' dis 10 % Miles' Challenge. Nos. 1 2 3 4 Woodruf's (P. S. & W.). Nos. 100 15 Draw Cut. Nos. 5 8 8 10 American Nos. 1 2 8 8 10 American Draw Cut. Nos. 5 8 8 10 American Nos. 1 2 8 8 10 American Nos. 1 1 2 8 9 10 American Nos. 1 2 8 8 10 American Nos. 1 1 2 8 9 10 American Nos. 1 2 8 8 10 American Nos. 1 2 8 8 10 American Nos. 1 1 2 8 9 10 American Nos. 1 1 1 8 10 Nos. 1
	Russell & Rrwin Mallory, Wheeler & Co. Nimick & Brittan Mfg. Co. Nimick & Brittan Mfg. Co. Norwich Lock Co.

October 30, 1884.	
Packing, Steam. N. Y. Belting & Packing Codis 50&10	Saws. Disston's Circular, Mill and Cross Cutdis 45&
Peach Parers. Rotary Knife	Falws. Disston's Circular, Mill and Cross Cut. dis 45& Disston's Hand. Panel, Rip. &c. dis 20& Boynton's Lightning Cross Cuts, new ist. dis Boynton's Circular and Mill. dis Boynton's Ice. dis
Pencils	Boynton's Lightning Hand, Panel and Rip dis Boynton's Lightning Hand, Panel and Rip dis Wheeler, Madden & Clemson Mfg. Co.'s Hand dis W. M. & C. Champion X Cuts, Regular Foot
Faber's Carpenters' high list, dis 50 Faber's Round Gilt # gro \$5.25 ne Dixon's Lead # gro \$4.50 ne Dixon's Lumber # gro \$6.75 ne Dixon's Carpenters' dis 40&210	Livingston's Butcher and Kitchen dis Livingston's Framed Wood— Nos 101 102 103 104 105
Picks. Railroad, 5 to 6, \$11.00; 6 to 7, \$12. dis 60&5 @ 60&10;	Per dos \$10,00 8,50 10,00 7,50 6,20 1 8imond's Circulardis
Pictare Nails. Brass Head, Sargent's list. Brass Head, T. & S. Mig. Co. dls 50 to Forcelain Head, T. & S. Mig. Co. dls 50 porcelain Head, Jud's list. Description Head, Jud's list. Wiles Patent. Pinking Irons.	cember 26, 1882. dis Peace Circular and Mill. dis 45& Peace Hand Panel and Rip. dis 20& Peace Cross Cuts Stordard
Porcelain Head, Judd's list dis 40 Porcelain Head, T. & S. Mfg. Co. dis 40 Niles' Patent dis 40	Peace Cross Cuts, Thin Back P foot Peace Band Saws, all widths dis 20% Richardson's Circular dis
Pinking Irons. \$\pi\$ dos 65\xi\$ ne Planes and Plane Irons. Bench, First Quality. dis 20\xi10\xi25	Richardson's Mill
Pinking Irons	Saws
The Staticy (S. R. & L. Co.)	Saw Frames. White, Vermont # doz \$1.50, dis \$5& Red, Polished and Varnished # doz \$1.50, dis \$3& Rods \$10 list dis 10& Saw Rods \$10 list dis 10& Saw Rods
Plane Irons, Auburn Tool Co	Saw Sets. Boynton's Patent X Cut, \$\P\$ dos \$12.00; Hand Saw, \$\P\$ doz \$10.00. dis Stillman's Genuine. \$\P\$ dos \$5.00 and \$7.75 dis 40.
Plane Irons, Sandusky Tool Co. dis 20410 9 Plane Irons, Sandusky Tool Co. dis 30410 9 Plane Irons, Sandusky Tool Co. dis 30410 9	Stillman's Imitation. # doz \$3.00 and \$7.75, dis 406 Common Lever. # doz \$2.25 and \$5.25, dis 406 Leach's No. 0, \$8.00; No. 1, \$15.00, dis
Pliers and Nippers. Button's Patent. Hall's Pat. Compound Lever Cutting Nippers, No. 2 5 in., \$13.50; No. 4, 7 in., \$21.00 \(\pi \) dos. dis 20&10; Humason & Beckley Mfg. Cc dis 30&10; Gas Pilers dis 55; Eureka Pilers and Nippers dis 55; Eureka Pilers and Nippers dis 25; P. S. & W. Cast Steel. P. S. & W. Tinners' Cutting Nippers add 6 \(\pi \) dis 10 \(\pi \) Plumba and Levels.	Hammer, Hotehkiss
Humason & Beckley Mrg. Ce dis 50 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Bemis & Call Co.'s Plate
P. S. & W. Cast Steel	Saw Sets. Boynton's Patent X Cut, \$\P\$ dos \$12.00; Hand Saw, dis \$14.00 stillman's Genuine \$\P\$ dos \$5.00 and \$7.75, dis \$40 stillman's Genuine \$\P\$ dos \$3.26 and \$5.25, dis \$40 condend in the c
Plambs and Levels	Croissant (Keller)No. 1, \$15.00; No. 2, \$24.00, dis
Chapin's Non-Adjustable. dis 65&10&10 \$ Standard Rule Co. 's New Adjustable. dis 65&10&10 \$ Standard Rule Co.'s Non-Adjustable. dis 65&10&10 \$	Scales
Jonson's Patent Adjustable dis 60&10&10 c 10 g Pocket Levels dis 65&10&10 g Davis' Inclinometers dis 20 s	Chatilion's Family Favorite
Samson Post Hole Digger W doz \$36.00, dis 20&10 %	Scale Beams, Custon die Scale Beams, Custon
Fletcher Post Hole Augers. \$\psi\$ dos \$50.00, das 50 \cdot \text{Eureka Digers.}\$ \$\psi\$ dos \$\$50.00 \text{Eureka Digers.}\$ \$\psi\$ dos \$\$50.00 \text{Eureka Digers.}\$ \$\psi\$ dos \$\$60.00 \text{Eureka Digers.}\$	Box, 1 Handle
Forming Hooks and Shears. Penning Hooks and Shears. Pruning Hooks and Shears. Pruning Hooks and Shears. Pisston's Combined Pruning Hook and Saw 9 doz 613 20210 5	Porter's Pat. Window and Door Framedis 33
Disston's Combined Pruning Hook and Saw \$\psi\$ dos \$18.00	Disston'sdis 4
Henry's Pruning Shears	Stanley R. & L. Co.'s Varnished Handlesdis 60&1 Stanley R. & L. Co.'s Black Handlesdis 50&1 Sargent & Co.'s Nos. 1 & 20, Forged Blade.dis 65%&1
Pulleys	Disseton's Patent Excelsion dis 45&1 Buck Bros dis 27 Stanley R. & L. Co.'s Varnished Handles dis 60&1 Stanley R. & L. Co.'s Black Handles dis 60&1 Sargent & Co.'s Nos. 1 & 20, Forged Blade.dis 60%4 Sargent & Co.'s Nos. 20 & 30, Cast Steel. dis 56&5 Sargent & Co.'s No. 60, Round Blade dis 60%2 Sargent & Co.'s No. 60, Round Blade dis 60%2 Sets interchangeable # dos \$18.00, dis 2 Champion dis 200 dis 200 dis 2 Champion dis 200 dis 200 dis 2 Clarke dis 200 dis 200 dis 200 dis 2 Clarke dis 200
Japanned Side dis 63&10 % Japanned Clothes Line dis 90&10 % Hay Fork, Solid Eye \$4.50; Swivel, \$5.00, dis 50&10 %	Champton. dis 2 Clark's Patent. dis 20&1 Crawford's Adjustable dis 3 Screws. Flat Head Iron dis 3
Hay Fork, "Anti Friction", "5,70, dis 108:10 5 Hay Fork, "F" Common and Pat. Busheddis 20 5 Hay Fork, Tarbox Pat. Irondis 20 5 Shade Backdis 45 5	Round Head Iron. dis 7 Flat Head Brass dis 7 Round Head Brass dis 6
Tackle Blocks See Blocks Pumps. dis	Brass and Silver Capped dis 4 Japanned, list of Plain Screws dis 60&1 Lag or Coach dis 75& Coach Patent Gimiet Point dis 7
rumps, Cistern	Bed
Saddlers' or Drive	Bench, Wood, Beech \$\psi\$ dox \$3.00, dis 1 Bench, Wood, Hickory dis 20&1 Hand, Wood dis 20&1
Punches. Saddlers' or Drive \$\psi\$ dos \$2.00; \$2.25; \$2.50 dis 55 \$ Bemis & Call Co.'s Cast Steel Drive dis 50&5 \$ Bemis & Call Co.'s Springfield Socket dis 50&5 \$ Spring \$\psi\$ dos \$8.00, dis 56 \$ Spring. Leach's Patent dis 50 \$5 \$ Bemis & Call Co.'s Spring and Check dis 40 \$ Solid Tinners' \$\psi\$ dos \$1.44, dis 50 \$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$	Hand Rail, Sargent's dis 66%&1 Hand Rail, Humason, Beckley & Co.'s dis 7 Hand Rail, Am. Screw Co. dis 7
Railing Door, Wrought Brass # n 35¢, dis 30 % Silding Door, Bronzed Wrt. Iron # foot 12¢, dis 40&5 % Silding Door Iron. Painted # foot 4¢, dis 20&10 \$	Lester, \$10.00
Railing Door, Wrought Brass \$\psi\$ h 35\epsilon\$, dis 20\epsilon\$ Sliding Door, Bronzed Wrt. Iron \$\pi\$ foot \$12\epsilon\$, dis 40\epsilon\$ Sliding Door Iron, Painted \$\pi\$ foot \$\epsilon\$, dis 20\epsilon\$ Sliding Door Iron, Painted \$\pi\$ foot \$\epsilon\$, dis 20\epsilon\$ Sliding Door Iron, Painted \$\epsilon\$ 5\epsilon\$ \$00 4.0 \rightarrow \text{dis 10} \epsilon\$ D. For N. & Hangers Small. \$\mathrew{\text{med}}\$ d. 40 \rightarrow \text{dis 10} \epsilon\$ Defect \$\epsilon\$.10 \$\epsilon\$ Small. \$\mathrew{\text{Med}}\$ d. \$\text{Larger}\$ are Terry's Wrought Iron, \$\phi\$ \neq foot \$\mathrew{\text{med}}\$ are \$\	Carafford's Adjustable dis 3 Screws dis 7 Tat Head for 10 Flat Head for 10
Per 100 feet \$2.15 2.70 3.25 net Terry's Wrought Iron, 5¢ # foot net Rakes.	Tinners' add 6 s. dis 10 Seymour's, List, Dec., 1881 dis 60&10 Heinsch's, List, Dec., 1881 dis 60&10
Rakes	Mass. Cutlery Co. St. Trimmers
### Rayors dis 20 5 ### Rayors Rayor Co. dis 20 5 ### Wostenholme & Butcher ### But to £, dis 10 5 #### Hayor Strops dis 60 5 #### Grayors dis 60 5 #### Hayor Strops dis 60 5 #### Hayor Strops dis 60 5 #### Hayor Strops dis 20 5 ##### Hayor Strops dis 20 5 ##### Hayor Strops dis 30 6 33 5 5 #################################	Wiss, J., & Sons' list, Dec., 1881. dis 60£10 Wiss, J., & Sons' Tallors' Shears. dis 5 Sheaves. Sliding Door, M. W. & Co., list dis 50£10£5 Sliding Door, M. W. & Co., list dis 60£10£5 Sliding Door, Patent Roller. dis 60£10£5 Sliding Door, Patent Roller. dis 60£10£5 Sliding Door, Patent Roller. dis 60£10£5 Sliding Door, Russell's Anti-Friction dis 60£10£5 Sliding Door, Moore's Anti-Friction dis 60£10£5 Sliding Shutter, R. & E. list. dis 50£10£5 Sliding Shutter, S. & E. list. dis 50£10£5 Sliding Shutter, S. & E. list. dis 50£10£5 Sliding Shutter, S. & E. list. dis 50£10£7 Sliding Shutter, S. & E. list. dis 50£10£7 Sliding Shutter, S. & E. list. dis 50£10£7 Sliding Shutter, S. & E. list. dis 50£10£10£10£10£10£10£10£10£10£10£10£10£10
Initiation Emerson	Sliding Door, Patent Roller dis 60&10&5 Sliding Door, Patent Roller, Hatfield's dis 60&10&5 Sliding Door, Russell's Anti-Friction dis 60&10&5
Challenge dis 35/2 % Challenge Beer Coolers dis 25 % Rivets dis 40 @ - %	Sliding Shutter, R. & E. list
	Moore's Anti-Friction (Hanging)New list, dis 25 Ship Teels. L. & I. J. White
Nos. 7 8 9 10 11 12 12 14 15 W D. 496 50¢ 52¢ 54¢ 50¢ 58¢ 60¢ 00¢ 00¢ 70¢	Ames' Shovels, Spades and Scoopsdis 179 Griffiths'dis 504.10 Old Colonydis 15
Rode State Brack Walnut 60¢ W dos dis 10 %	Groom Shovel Co. dis 20 Hussey, Binns & Co. dis 20 Lehigh Mfg. Co. dis 50&10 Payne Pettebone & Son, list Jan. 2, 1882. dis 50&10
Acme (Anti-Friction). dis 55 g Rope.—Mnt'rs l'st, Oct. 15, 1884. dis 1¢ # m Mantla. dis 1¢ # m	R. T. Pettebone, Pat. Shovels, new list
Stair Black Walnut .60 \(\psi \) dos, dis 10 \(\psi \)	Bowland's, Steel
Sisal	Polished Steel, new list
	Spoke Shaves. Defiance Metallicdis 20410
Sad Irons. From 4 to 10	Wood. dis 30 Railey's (Stanley R. & L. Co.), new list
Rules Boxwood	Wood. dis 30
Enterprise Star Irons, new list, July 29, 1882 dis 35 5 Combined Fluter and Sad Iron \$\psi\$ doz. \$15.00, dis 15 5 Chinese Laundry (N. E. Butt Co.)	Douglass'
Sand Paper and Emery Paper. Bacder & Adamson's Flint, 00 to 13 \$4.50 \(\pi\) ream Bacder & Adamson's Flint, 2, 2% & 3 \(5.00 \pi\) ream	Species Spec
Bacder & Adamson's Star \$75 \(\pi \) ream (\$50 \) Bacder & Adamson's Emery \(\pi \) ream (\$50 \(\pi \) 13.50 \) Bartles Best Flint, Nos. 00 to 136 \(\pi \) ream \$4.50 \(\pi \)	Holmes, Booth & Haydens
Bartles Best Flint, assorted	Tin (P. S. & W.), Teas. \$1.35 \(\psi\) gro ne Tin (P. S. & W.), Tables. \$2.00 \(\psi\) gro ne Tin (Cowles Hdw. Co)
tadison Mills Flint, all Nos	Tin (cowies flow, Co.), case lots
Trocus Cloth	Squares Steel and Iron Squares Steel and Iron Steel and Iron Nickel Plated Steel Try Square and T Bevels dis 55&10 Disston's Try Square and T Bevels dis 40 Winterbottom's Try and Miter dis 20&10 Stocks and Dies dis 5&10620 Lightning "Screw Plate dis 10 Stones dis 10
New England, same list as B. & A. Flint. dis 50&10 5 isne"s. dis 30&10 5 isne"s. dis 30&10 5 isne"s. dis 30&10 5 isne"s. p. 15/6 & 13¢ net Patent. p. h. 15/6 & 16¢ net White Cotton Braided. 33\66 & 34¢ \text{ in net} Common Russia Sash p. 15/6 abel Laid Italian p. 15¢ abel Laid Italian p. 16¢ iliver Lake, A Quality, White 50¢ dis 10&10 5 iliver Lake, A Quality, White 50¢ dis 10&10 5 iliver Lake, B Quality, White 50¢ dis 15&10 5 iliver Lake, B Quality, White 50¢ dis 15&10 5 iliver Lake, B Quality, White 50¢ dis 15&10 5 iliver Lake, C Quality, White 600 5 iliver Lake, B Quality, White 600 5 iliver Lake, C Quality, White 600 5 Sash Locks.	"Lightning" Screw Plate
Patent " 15¢ Pable Laid Italian " 20¢ ndia Cable Laid " 14¢	Washita Stone ■ \$\psi\$, \$\psi\$, \$\psi\$, \$\text{dis } \$33\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Silver Lake, A Quality, White	Washita Stone Slips
Sliver Lake. C Quality, White (only)	Turkey Slips (Chase)
Sash Locks	Stove Polish
Valker's dis 10 × ttwell Mfg. Co dis 25@334 × Iammond's Window Springs dis 25 ×	Gold Medal
Common Sense," Japanned, Coppered and Bronsed. ————————————————————————————————————	Rising Sun. # gro \$3.75 net Rising Sun. # gro \$5.75 net Dixon's Plumbago. # 3 set net Boynton's Noon Day, # gro, No. 1, large \$5.50; No. 2
Sark No. 1, 10.00 No. 2, 28.00 gross dis 334 5 erguson's dis 334 6 erguson's dis 334 6 erguson's dis 334 6 erguson's dis 334 erguson's erguson's dis 334 erguson's erguson's erguson's dis 334 erguson's erg	small, \$3 · No. 3, medium, \$4. Nacks, Brads, &c. New List, Sept. 1, 1863 Cinned Sweder Tacks
ayson's Perfect	Finned American Tacks. dis 30 % weedes Tacks, all kinds dis 30 % American Cut Tacks. dis 30 %
maileable iron, February, 1884, listdis 33½ % (Gray Iron, February, 1894, listdis 33½ % (Gugunin's Sash Locks, May, 1884, listdis 33½ % (Gray Iron Fractical "	opper Tacks and Nalls
Sash Weights. blid Eyes, in 500 b lots and over	Inishing Naiis dis 25 5 7 Tunk and Clout Naiis dis 25 5 7 Tunk and Clout Naiis dis 25 5 7 Tunk and Patent Brads dis 20 5 1 Tunk and Patent Brads dis 20 5 Tunk and Patent Brad
Ligunia's "New" and "Improved Screw" Balanes: Maileable Iron, February, 1884, list. .dis 38% 3 C Gray Iron, February, 1884, list. .dis 38% 4 C C C C C C C C C	Stocks and Dies
The second secon	and the second s

	Double-pointed Tacksdis 75@75&10 %	Parallel, Prentiss. dis 25 Parallel, Simpson's Adjustable dis 40 Parallel, Simpson's Adjustable dis 40 Saw Filers, Honney's # doz \$15.90, dis 10 Saw Filers Stearn's # doz \$17.50, dis 10 Saw Filers Hopkins' # doz \$17.50, dis 10 Saw Filers Heading dis 40c110 Saw Filers, Reading dis 40c110 Saw Filers dis 20c1 Cowell Hand Visce dis 20 Richardson's Visc and Anvil dis 25 Richardson's Visc and Richardson's Vis
:10 %	Tap Borers.	Parallel, Frentiss
10 %	Inp Dorers.	Parallel, Simpson's Adjustabledis 40
40 %	Common and Ring	Saw Filers, Bonney's
40 %	Ives' Tan Borers	Saw Filers, Stearn's dis 20\$ 10
4U %	Two! Top Borers	Saw Filers Honking' 20 dos 817 50 die 10
25 % 25 %	1 Vos 1 1 1 Dorers	Saw Filoss Dodding
25 %	Enterprise Mrg. Co dis 20&10 <	Saw Pilers, Reading
30 %	Clark'sdis 20010	Saw Fliers, Wentworthdis 20&10
27e	The same as a same a sa	Cowell Hand Visesdis 20
30€		Richardson's Vise and Anvil dis 25
	Americandis 25&10 %	
20 %	Grants as 20&10 \$	Winsher Cuttons
	Spring	Washer Cutters. Smith's Patent. # doz \$12.00, dis 20&10&10 Johnson's. # doz \$11.00, dis 33\gamma_0 Penny's. # doz \$14,00, dis 33\gamma_0 Appleton's # doz \$10.00, dis 60&10 Bonney's. dis 30&10
	Unesterman's Regular list die 25 d	To Shirth & Fatent & dog \$12.00, dis 20210210
net	Thermometers.	Johnson's 4 doz \$11.00, dis 331/4
		Penny's
35 %	Tin Casedis 80 «	Appleton's % dog \$18.00 dis 60% 10
		Bonney's
25 €	Trunsom Lifters.	Doubley sdis 30 & 10
10 %	Wollensak's Patent	Washers See Nuts and Washers.
TO %	Wollensak's Patent dis 95 %	THE SEE NUIS AND WASHERS.
10%	Reiher, Imp. Lifter, list, Oct. 1883	\$\$7-\$9 \$\$7\$\$.
264	Excelsion.	Well Wheelsdis 60& 10
29€	dis out 1022 %	4474
10 % 45 %	Tobacco Cutters.	Wire.
45 %	Enternales Mes Co (Ch.	Brong and Conner new list Town to your dis no
40 %	Enterprise Mrg. Co. (Champion)dis 20&10 \$	Mass and Copper, new list, Jan. 18, 1884
45 %	Wood Bottom # dog \$10.00 die 90.010 g	market, Bright and Annealed, Nos. 0 to 18 dis 67%
0. 3,	All Iron 20 dog \$4.50 not	Market, Coppereddis 62%
	Nashua Lock Co.'s St. dos 218 00 dts 200 18	Market, Galvanized dis 55
	Tonices Mrs. Co. (Champion)	Brass and Copper, new list, Jan. 18, 1884. die 20 Market, Bright and Annealed, Nos. 0 to 18. die 67½ Market, Coppered. die 67½ Market, Market, Grindel 18t. die 67½ Market, Tinned, Tinned 18t. die 67½ Stone, Bright and Annealed Nos. 19 to 26. die 70 Stone, Bright and Annealed Nos. 27 to 36. die 70 Stone, Galvanized, Nos. 19 to 36. die 75 Stone, Galvanized, Nos. 19 to 36. die 525 Stone, Galvanized, Nos. 19 to 36. die 525 die 5254
&5 %	Clipper (Saggert & Co.)	Stone Bright and Amnorled Non 10 to 26
OLU 70	Chipper (considered CO.) # dog \$24. din 504:10 4	Otome, Dright and Annealed Nos. 19 to 20
45 %	Acme R dog \$90 00 4th 40 d	Stone, Bright and Annealed Nos. 27 to 36,dis 75
	Winners! Woods and Mr. h.	Stone, Galvanized, Nos. 19 to 30
10 -	Tinners' Tools and Machines.	Stone, Tinned, Tinned list dis 5734
10 %	Machines (P. S. & W.)list add 20 % Tools (P. S. & W.)add 6 % Trans	
10 %	Tools (P. S. & W.)	Tinned Broom Wire
10 %	man and of the top	Ammaded Fire
70	Traps.	Annealed Fence, Nos. 8 & 9dis 6734
	Games Namekan	Annealed Grane, Nos. 10 to 14 dis 6712
	dia 95 «	Fence Stanles 20 5 5 5 5 5 6
25 €	Game, Onelda Pattern die 60410 #	Fence Stanles Galwanised
&5 %	Game, Blake's Patent	Girchel Ote 1 177
0.0 %	Mouse Wood Choices	Stude Steel Wire
86 %	Mouse Bound Sitter # dog holes, 15¢	Barb Fence See Trade Repor
\$5 %	Mouse, Round wire # doz \$1.50, dis 10 \$	Wire on Spools
15 %	mouse Cage, Wire	Steel Music Wire Nos 7 to 90 81 00 20 1
10 %	Mouse Catch-'em-alive. # dos \$2.50 die 15 #	Ploture Wine
10 %	Mouse, "Bonanga"	Clother Ties With the With the William to the Control of the Contr
	Mouse, Deluston	Ciotnes Line Wire, Galvanized F coil 25¢ @ 40¢ ne
&5 %	Came, Newhouse	Picture Wire. Galvanized \$\pi\$ coil 25\pi & 40a 55\$ Clothes Line Wire, Galvanized \$\pi\$ coil 25\pi & 40\pi\$ ne Wire Cloth, green, drab and black, \$\pi\$ 100 sq. ft. \$\pi\$ 2.25 ne
85 %	reat. Decoy doz \$10,00, dis 10 %	#2.00 @ 2.25 ne
10 %	Trowels	Wrenches. American Adjustable dis 48 Sex 10
2248		Wrenches.—American Adjustable dis 45
78.2	Lothrops' Brick and Plasteringdis 20&10 %	Raxter's Adjustable "S"
TO W	Louintops Brick and Plastering .dis 20&10	Bayton's Diagonal
55 %	Disaton's Delok and Disates	Balter's Diagonal
20 %	Bassels Black and Flasteringdis 20&10 &	Coes Genuinecash in 10 days, dis 60&3
10 %	reace's riastering dia 05 g	Coes' " Mechanics' " dis socioes
10 %	Clement & Maynard's.	Coes' Pattern Mallophia die 70615
	Rose's Brick	Coos Pattern Wrought
40 %	Brade's Brick	Classed Street, Wildgells
1	Worse Ille Deleb and Wit	Giraru Standarddis 65&10
10 #	worran's Brick and Plastering dis 20 c	Girard Agriculturaldis 75
10 %	Gardendis 50 d	Bemis & Call's Patent Combination dis 20
10 %	Circincia & maynard's dis 20 \(\) \(\	Remis & Call's Morrick's Pattorn
55 %		Bornie & Call's Delants Dettern
40 €	Butter and Cheese dis 25 %	Bornie & Collie Griff & Fattern
25 %	- dis 20 %	
30 %		A STATE OF CHARLES OF CHARLES AND A STATE OF CHARLES AND A
	Trucks, Warehouse, &c.	Aiken's Pocket (Bright)
mand	Trucks, Warehouse, &c.	Alken's Pocket (Bright)
net	Trucks, Warehouse, &c.	Alken's Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$\psi\$ dos \$4.00, dis 40 Webster's Patent Combination
net 30 %	Trucks, Warehouse, &c.	Aiken's Pocket (Bright). \$0,00, dis 50&10 The Favorite Pocket (Bright). \$\psi\$ dos \$4.00, dis 40 Webster's Patent Combination. dis 25 Agricultural Wrenches Electronic
net 30 %	Trucks, Warehouse, &c.	Aiken's Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
net 30 % 60 %	Trucks, Warehouse, &c.	Alken's Pocket (Bright). \$0.00, dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 40 Webster's Patent Combination. dis 25 Agricultural Wrenches, Eberhard. dis 33% Boardman's. dis 26
net 30 % 60 % 25 %	Trucks, Warehouse, &c.	Alken's Pocket (Bright). \$6.00, dis 50e10 The Favorite Pocket (Bright). \$6.00, dis 50e10 Webster's Patent Combination. \$6.00, dis 25 Agricultural Wrenches, Eberhard. dis 33 Boardman's. dis 25 'Always Ready' dis 25
net 30 % 60 % 25 %	Trucks, Warehouse, &c.	Alken's Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$6.00, dis 40 Webster's Patent Combination. dis 25 Agricultural Wrenches, Eberhard dis 33% Boardman's. dis 25 "Always Ready" dis 25 Alligator. dis 40&10 Alligator.
net 30 % 60 % 25 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 50&10 Webster's Patent Combination. \$0.00 dis 40 Agricultural Wrenches, Eberhard dis 233 Boardman's. dis 233 Alligator. dis 40&10 Donohue's Engineer. dis 40&10
net 30 % 60 % 26 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00, dis 50&10 The Favorite Pocket (Bright). \$0.00, dis 50&10 The Favorite Pocket (Bright). \$0.00, dis 40 Webster's Patent Combination. dis 25 Agricultural Wrenches, Eberhard dis 33% Boardman's. dis 25 "Always Ready" dis 25 Alligator. dis 40&10 Donohue's Engineer. dis 25
net 30 % 60 % 26 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Girard Agricultural dis 75 Bemis & Call's Patent Combination dis 75 Bemis & Call's Merrick's Patern dis 35 Bemis & Call's Merrick's Patern dis 25 Bemis & Call's Brigs's Pattern dis 25 Bemis & Call's Grigs's Pattern dis 25 Bemis & Call's Cylinder or Gas Pipe dis 40 Alken's Pocket (Bright) \$0,00, dis 50&10 The Favorite Pocket (Bright) \$0,00, dis 50&10 Webster's Patent Combination dis 25 Agricultural Wrenches, Eberhard dis 33% Boardman's dis 25 "Always Ready" dis 25 Alligator dis 40&10 Donohue's Engineer dis 25 W ringers Per dos.
net 30 \$ 60 \$ 26 \$ 10 \$ 10 \$	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50-810 The Favorite Pocket (Bright). \$6.00, dis 50-810 Webster's Patent Combination. \$6.00 \$4.00, dis 50-810 Superintural Wrenches, Eberhard. dis 33-810 Boardman's. dis 32-810 Alkays Ready. dis 25-311 Boardman's. dis 32-31 Alkays Ready. dis 25-31 Boardman's. dis 40-810 Donohue's Engineer. dis 25-31 Wringers. Per dos. Novetty, for CommonFlubs, No. 2, 10-inch. \$50.00.
net 30 % 60 % 25 % 10 % 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00, dis 50&10 the Favorite Pocket (Bright). \$0.00, dis 50&10 the Favorite Pocket (Bright). \$0.00 dis 40 two busier's Patent Combination. dis 25 agricultural Wrenches, Eberhard. dis 33% Boardman's. dis 25 Always Ready dis 25 Always Ready dis 25 Alligator. dis 25 the Boardman's dis
net 30 % 60 % 25 % 10 % 10 % 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50 cl o The Favorite Pocket (Bright). \$0.00 dis 50 cl o The Favorite Pocket (Bright). \$0.00 dis 50 cl o The Favorite Pocket (Bright). \$0.00 dis 50 cl o Webster's Patent Combination. \$0.00 dis 40 cl o Boardman's. \$0.00 dis 50 cl o Boardman's. \$0.00 dis 40 cl o Boardman's.
net 30 % 60 % 25 % 10 % 10 % 10 % net	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50e10 The Favorite Pocket (Bright). \$6.00, dis 50e10 Webster's Patent Combination. \$6.00 \$4.00, dis 25.40 Agricultural Wrenches, Eberhard. \$6.18 334 Boardman's. \$6.18 25.40 Allagator. \$6.18 25.40 Allagator. \$6.18 25.40 Donohue's Engineer. \$6.18 20.50 Wringers. Novetty, for CommonTubs, No. 2, 10-inch. \$6.00 Novetty, for Common Tubs, No. 3, 11-inch. \$6.00 Novetty, for Common Tubs, No. 3, 11-inch. \$6.00 Excelsior, for Stationary Tubs, No. E, 10-inch 39.00
net 30 % 60 % 26 % 10 % 10 % 10 % net 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 40 Websier's Patent Combination. \$0.00 dis 40 Websier's Patent Combination. \$0.00 dis 40 Agricultural Wrenches, Eberhard. \$0.00 dis 25
net 30 % 60 % 26 % 10 % 10 % 10 % net 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). The Favorite Pocket (Bright). Webster's Patent Combination. Gloss 40, 40, 418, 418, 418, 418, 418, 418, 418, 418
net 30 % 60 % 26 % 10 % 10 % 10 % net 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$6.00, dis 40 Websier's Patent Combination. dis 25 Agricultural Wrenches, Eberhard. dis 33% Boardman's. dis 25 Alligator. dis 25 Alligator. dis 40&10 Donohue's Engineer. dis 40&10 Donohue's Engineer. dis 25 Wringers. Per dos. Noveity, for CommonTrubs, No. 2, 10-inch. 34.50 Excelsior, for Stationary Tubs, No. E, 10-inch 39.00 Excelsior, for Stationary Tubs, No. F, 11-inch 43.50 Excelsior, with Folding Bench, No. A, 10-inch 88.00 Excelsior, with Folding Bench, No. B, 11-inch 88.50 Excelsior, with Folding Bench, No. B, 11-inch 88.50
net 30 % 60 % 26 % 10 % 10 % 10 % net 10 %	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50 k10 The Favorite Pocket (Bright). \$0.00 dis 50 k10 The Favorite Pocket (Bright). \$0.00 dis 50 k10 dis 40 Webster's Patent Combination. \$0.00 dis 40 Agricultural Wrenches, Eberhard dis 33 dis 25 dis 25 diligator. \$0.00 dis 25 diligator. \$0.00 dis 40 k10 Donohue's Engineer. \$0.00 dis 25 diligator. \$0.00 dis 26 dis
net 30 x 60 x 25 x 10 x 10 x 10 x 10 x net 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 60.00, dis 50.10 The Favorite Pocket (Bright). # 60.04, dis 50.10 Webster's Patent Combination. do. 40.00 Webster's Patent Combination. do. 40.00 Agricultural Wrenches, Eberhard. do. 418.23 Boardman's. dis 25 Hoardman's. dis 25 Alligator. dis 408.10 Donohue's Engineer. dis 25 Wringers. Webster Boardman Frust, No. 2, 10-inch. \$10.00 Novelty, for Common Tubs, No. 3, 11-inch. 34.50 Excelsior, for Stationary Tubs, No. E, 10-inch 39.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 48.00 Excelsior, with Folding Bench, No. B, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 10-inch 48.00 Excelsior, No. 24.00 Excelsior, No. 25.00 Universal, No. 25.00
net 30 x 60 x 26 x 10 x 10 x 10 x 10 x 10 x net 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00 dis 50&10 The Favorite Pocket (Bright). \$6.00 dis 50&10 The Favorite Pocket (Bright). \$6.00 dis 40 Websier's Patent Combination. \$6.00 dis 40 Websier's Patent Combination. \$6.00 dis 40 Agricultural Wrenches, Eberhard. \$6.33% Boardman's. \$6.10 dis 25 Hoardman's. \$6.10 dis 25 Alligator. \$6.10 dis 25 Alligator. \$6.10 dis 25 Wringers. \$6.10 dis 40&10 Donohue's Engineer. \$6.10 dis 25 Wringers. \$6.10 dis 25 Noveity, for Common Tubs, No. \$1.1 dis 3.50 Excelsior, for Stationary Tubs, No. \$1.1 dis 43.50 Excelsior, for Stationary Tubs, No. \$1.1 dis 43.50 Excelsior, with Folding Bench, No. \$1.1 dis 52.50 Universal, No. \$24. \$6.00 Universal, No. \$24. \$6.00 Universal, No. \$24. \$6.00 Universal, No. \$2. \$6.00 Universal,
net 30 x 60 x 25 x 10 x 10 x 10 x 10 x 10 x 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50:10 The Favorite Pocket (Bright). \$6.00, dis 50:10 Webster's Patent Combination. \$6.00, dis 40:40 Webster's Patent Combination. \$6.00, dis 40:40 Agricultural Wrenches, Eberhard. \$6.83 Boardman's. \$6.83 Boardm
net 30 x 60 x 26 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$6.00, dis 50&10 The Favorite Pocket (Bright). \$6.00, dis 40 Websier's Patent Combination. dis 25 Agricultural W renches, Eberhard. dis 33% Boardman's. dis 25 Alligator. dis 40&10 Donohue's Engineer. dis 40&10 Donohue's Engineer. dis 40&10 W ringers. Per dos. Noveity, for CommonTubs, No. 2, 10-inch. \$5.00 Excelsior, for Stationary Tubs, No. F, 11-inch 43.50 Excelsior, for Stationary Tubs, No. F, 11-inch 43.50 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 52.50 Universal, No. 24 Universal, No. 2 So. 00 Universal, No. 14 So. 00 So. 00 Universal, No. 14 So. 00 So. 00 Universal, No. 14 So. 00 So. 00 So. 00 Universal, No. 14 So. 00 So
net 30 x 60 x 26 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50:10 The Favorite Pocket (Bright). \$0.00 dis 50:10 The Favorite Pocket (Bright). \$0.00 dis 50:10 dis 40 Webster's Patent Combination. \$0.00 \$4.00 dis 40 Agricultural Wrenches, Eberhard dis 33:40 dis 25:40 dis 25:40 dis 26:40 dis 2
net 30 x 60 x 26 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 60.00, dis 50.210 The Favorite Pocket (Bright). # 60.00, dis 50.210 Webster's Patent Combination. # 60.024, 60, dis 25.4 Agricultural Wrenches, Eberhard dis 33.4 Boardman's. dis 25.4 Boardman's. dis 25.4 Bligator. dis 40.8 Alligator. dis 40.8 Alligator. dis 40.8 Wringers. Per dox. Novetty, for Common Tubs, No. 2, 10-inch # 83.00 Novetty, for Common Tubs, No. 5, 10-inch 30.00 Excelsior, for Stationary Tubs, No. E, 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 48.00 Universal, No. 24. 33.00 Universal, No. 24. 33.00 Universal, No. 14. 34.50 Excelsior, No. 14. 39.00 Universal, No. 15. 50.00 Excelsior, No. 20. 50.00
net 30 x 60 x 26 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 50&10 The Favorite Pocket (Bright). \$0.00 dis 40 Websier's Patent Combination. \$0.00 dis 40 Websier's Patent Combination. \$0.00 dis 40 Agricultural Wrenches, Eberhard. \$0.33\footnote{1}{2} dis 25 dis 2
net 30 x 60 x 26 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6,00, dis 50:10 The Favorite Pocket (Bright). \$6,00, dis 50:10 The Favorite Pocket (Bright). \$6,00, dis 50:10 Webster's Patent Combination. \$60:24.00, dis 40:40 Webster's Patent Combination. \$60:24.00 Agricultural Wrenches, Eberhard. \$61:35 Boardman's. \$61:25 Boardman's.
net 30 x 60 x 26 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 60.00, dis 50.10 The Favorite Pocket (Bright). # 60.08, dis 50.10 Webster's Patent Combination. # 60.08, dis 25. Agricultural Wrenches, Eberhard. # 61.08, 25. Boardman's. # 61.08, 25. Boardman's. # 61.08, 25. Alligator. # 61.08, 60.08, 60.08, 60.08 Webster's Patent Combination. # 61.08, 60.08 Wringers. # 61.08, 60.08, 60.08 Wringers. # 61.08, 60.08, 60.08, 60.08 Novelty, for Common Tubs, No. 2, 10-inch. # 81.00 Novelty, for Common Tubs, No. 3, 11-inch. # 81.00 Novelty, for Common Tubs, No. 5, 10-inch. # 80.00 Novelty, for Common Tubs, No. 5, 10-inch. \$ 60.08 Excelsior, for Stationary Tubs, No. E, 10-inch 48.00 Excelsior, for Stationary Tubs, No. A, 10-inch 48.00 Diversal, with Folding Bench, No. B, 11-inch 48.00 Universal, No. 12. # 83.00 Universal, No. 134 Universal, No. 144 Universal, No. 145 Universal, No. 146 Universal, No. 157 Universal, No. 158 Universal, No. 158 Universal, No. 159 Universal, For Set Tubs, A 256 Universal, for Set Tubs, C 11.06 Un
net 30 x 60 x 260 x 10 x 10 x 10 x net 10 x 10	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$\frac{1}{2}\$ \$0.00 dis 50 \text{ for 10 bits
net 30 5 60 5 25 5 10 5 10 5 10 5 10 5 10 5 10 5 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$6.00, dis 50e10 The Favorite Pocket (Bright). \$6.00, dis 50e10 Webster's Patent Combination. \$6.00 \$4.00, dis 25.40 Agricultural Wrenches, Eberhard. \$6.25.40 Boardman's. \$6
net 30 x 60 x 10 x 10 x 10 x 10 x 10 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$0.00 dis 50 k10 The Favorite Pocket (Bright). \$0.00 dis 50 k10 The Favorite Pocket (Bright). \$0.00 dis 40 Webster's Patent Combination. \$0.00 dis 40 Webster's Patent Combination. \$0.00 dis 40 Agricultural Wrenches, Eberhard. \$0.01 dis 25 dis 25 Meritary and \$0.00 dis 25 dis 26
net 30 5 60 5 10 5 10 5 10 5 10 5 10 5 10 5 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 85.00, dis 50.110 The Favorite Pocket (Bright). # 85.00, dis 50.110 Webster's Patent Combination. # 60s \$4.60, dis 40. Webster's Patent Combination. # 61s 33.40 Boardman's. # 61s 33.40 Boardman's. # 61s 33.40 Boardman's. # 61s 33.40 Boardman's. # 61s 32.40 Boardman's. # 61s 32.40 Alligator. # 61s 25.40 Alligator. # 61s 25.40 Boardman's.
net 30 x 60 x 25 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 60.00, dis 50.10 The Favorite Pocket (Bright). # 60.04, dis 50.10 Webster's Patent Combination. # 60.04, 60, dis 25. Agricultural Wrenches, Eberhard. # 61.833, 60.04 Boardman's. # 61.833, 60.04 Boardman's. # 61.835, 60.04 Board
net 50 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). \$\frac{1}{2}\$ \$0.00 \text{ dis 50-k10}\$. The Favorite Pocket (Bright). \$\frac{1}{2}\$ \$0.00 \text{ dis 50-k10}\$. Webster's Patent Combination. \$\text{ dis 40}\$, \$40 \text{ dis 40}\$. Agricultural Wrenches, Eberhard \$\text{ dis 43}\$. Agricultural Wrenches, Eberhard \$\text{ dis 40}\$. Boardman's. \$\text{ dis 25}\$. Alligator. \$\text{ dis 40-k10}\$. Donohue's Engineer. \$\text{ dis 40-k10}\$. Donohue's Engineer. \$\text{ dis 40-k10}\$. Novetty, for Common Tubs, No. 2, 10-inch. \$0.00 \text{ Novetty, for Common Tubs, No. 3, 11-inch. \$4.50 \text{ Excelsior, for Stationary Tubs, No. E, 11-inch. \$4.50 \text{ Excelsior, for Stationary Tubs, No. E, 11-inch. \$4.50 \text{ Excelsior, for Stationary Tubs, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. A, 10-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Excelsior, with Folding Bench, No. B, 11-inch. \$4.50 \text{ Universal, No. 2} \text{ 30.00 }\text{ Universal, No. 15} \text{ 30.00 }\text{ Universal, No. 15} \text{ 30.00 }\text{ Universal, for Set Tubs, E 15-6 }\text{ 48.00 }\text{ Universal, for Set Tubs, E 15-6 }\text{ 48.00 }\text{ Universal, for Set Tubs, E 15-6 }\text{ 30.00 }\text{ 0-pericas No. 25-6 }\text{ 30.00 }\text{ Peericas No. 25-6 }\text{ 30.00 }\text{ 0-pericas No. 35-6 } 30
net 30 x 26 x 100 x 110	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 60.00 dis 50.10 The Favorite Pocket (Bright). # 60.00 dis 50.10 Webster's Patent Combination. # 60.02 4.60, dis 25.40 Agricultural Wrenches, Eberhard. dis 25.40 Boardman's. dis 25.40 Boardman's. dis 25.41 Boardman's
net 50 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). The Favorite Pocket (Bright). Webster's Patent Combination. dis 30.34 Webster's Patent Combination. dis 40.32 Agricultural Wrenches, Eberhard. dis 30.35 Boardman's. dis 20.35 Alligator. dis 40.410 Boardman's. dis 20.31 Alligator. dis 40.410 Boardman's. dis 40.410 Bonohue's Engineer. dis 40.410 Bright Green. Wringers. Novetty, for Common Tubs, No. 2, 10 inch. 35.00 Noveity, for Common Tubs, No. 3, 11 Inch. 35.00 Excelsior, for Statemary Tubs, No. E, 10 inch 48.00 Excelsior, for Statemary Tubs, No. F, 11 inch 48.00 Excelsior, with Folding Bench, No. A, 10 inch 48.00 Excelsior, with Folding Bench, No. B, 11 inch 52.50 Universal, No. 24. Universal, No. 24. Universal, No. 14. Universal, No. 14. Universal, No. 14. Universal, No. 14. Universal, No. 15. Universal, No. 14. Universal, No. 15. Universal, No. 15. Universal, No. 16. Oniversal, Or Set Tubs, A 25. Universal, for Set Tubs, E 15. dams 6 Co. No. 8. Universal, for Set Tubs, C 1. dams 6 Co. No. 8. 0.00 Peerless No. 24. 0.00 Peerless No. 34. 0.00 Werropolitan, No. 2. Metropolitan, No. 2. Wrent Strates Heateners.
net 10 20 20 20 20 20 20 20	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 85.00 dis 50.110 The Favorite Pocket (Bright). # 85.00 dis 50.110 Webster's Patent Combination. # 60s \$4.60, dis 45. Agricultural Wrenches, Eberhard dis 43. Boardman's. dis 25. Boardman's. dis 25. Boardman's. dis 25. Alligator. dis 40s. Alligator. dis 40s. Alligator. dis 40s. Alligator. dis 40s. Boardman's. Per dox. Noveity, for Common Tubs, No. 2, 10-inch. \$30.00 Noveity, for Common Tubs, No. 3, 11-inch. \$45.00 Excelsior, for Stationary Tubs, No. E, 10-inch 39.00 Excelsior, for Stationary Tubs, No. E, 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 52.50 Universal, No. 22. 33.00 Universal, No. 24. 33.00 Universal, No. 134. 39.00 Universal, No. 134. 39.00 Universal, for Set Tubs, A 256. 39.00 Universal, for Set Tubs, E 156. 39.00 Universal, for Set Tubs, E 35. 30.00 Peerless No. 35. 30.00 Peerless No. 35. 30.00 Metropolitan, No. 24. 30.00 Metropolitan, No. 24. 30.00 Werought Staples, Hooks, &c. See Hooks.
10 x 40 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Novelty, for CommonFrubs, No. 2, 10-inch. \$90.00 Novelty, for Common Tubs, No. 3, 11-inch. \$34.50 Excelsior, for Stationary Tubs, No. E, 10-inch 39.00 Excelsior, for Stationary Tubs, No. F, 11-inch 43.50 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 52.50 Universal, No. 24.
10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). The Favorite Pocket (Bright). Webster's Patent Combination. Agricultural Wrenches, Eberhard. dis 43. Boardman's. Always Ready
10 x 40 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 1	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Alken's Pocket (Bright). # 80.00 dis 50.10 The Favorite Pocket (Bright). # 80.00 dis 50.10 Webster's Patent Combination. # 60.24.60, dis 25.4 Agricultural Wrenches, Eberhard. dis 33.4 Boardman's. dis 25.4 Boardman's. dis 25.4 Boardman's. dis 25.4 Bligator. dis 40.8 Alligator. dis 40.8 Alligator. dis 40.8 Alligator. dis 40.8 Wringers. Per dox. Noveity, for Common Tubs, No. 2, 10-inch 830.00 Noveity, for Common Tubs, No. 3, 11-inch 84.50 Excelsior, for Stationary Tubs, No. E. 10-inch 39.00 Excelsior, for Stationary Tubs, No. E. 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 52.50 Universal, No. 24. 33.00 Universal, No. 25. 33.00 Universal, No. 13.4. 39.00 Universal, No. 14. 39.00 Universal, No. 15. 39.00 Universal, No. 15. 39.00 Universal, for Set Tubs, A 25.6 Universal, for Set Tubs, E 15.9 Adams & Co. No. 8 Tubs, C 1. 68.00 Adams & Co. No. 8 Tubs, C 1. 68.00 Adams & Co. No. 8 Tubs, C 1. 30.00 Wetropolitan, No. 24. 30.00 Wetropolitan, No. 25. 30.00 Wetropolitan, No. 25. 30.00 Wetropolitan, No. 25. 30.00 Wereught Staples, Hooks, &c.,—See Hooks.
10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882	Noveity, for CommonTubs, No. 2, 10-inch. 830.00 Noveity, for Common Tubs, No. 3, 11-inch. 34.50 Excelsior, for Stationary Tubs, No. E, 11-inch 39.00 Excelsior, for Stationary Tubs, No. F, 11-inch 43.50 Excelsior, with Folding Bench, No. A, 10-inch 48.00 Excelsior, with Folding Bench, No. B, 11-inch 52.50 Universal, No. 2½. 30.00 Universal, No. 1½. 30.00 Universal, No. 1½. 30.00 Universal, No. 1½. 34.50 Universal, No. 1½. 39.00 Universal, No. 1½. 39.00 Universal, No. 1½. 39.00 Universal, No. 1½. 30.00 Universal, No. 1½. 48.00 Universal, No. 10. 57.00 Universal, No. 10. 50.00 No. 10.

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I C 10x28. 10 00 @ 10.25 9.75 @ 9.50 @ 9.684
I X 14x30. 13.50 @ 18.20 @ 18.22 to 90 x 20. 18 x 22 to 90 x 20. 18 x 20 to 90 x 20

2 and 16 oz. and heavier 354 By the case. 18 28 40 dark.

12 oz. and lighter. 354 By the case. 18 28 40 dark.

12 oz. and lighter. 355 By the case. 18 28 40 dark.

13 oz. and lighter. 355 By the case. 18 28 dep. 20 dors. 20 dors

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LEAD.—DUTY: Pig. 3 D: Pipe and Sheet, 8¢	\$2 \ 100 T	b; Old Lead, 2¢	P
American			d
Pipe		40	ŀė
Sheet. Shot. Chilled Shot	I	6%¢, dis 90	70
ANTI TONY. Hallett's Cookson		9 D 11 @ 11%	e
SPELTER—Duty : P	igs, Bare	and Plates, \$1.5	0
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in oil. reen Chrome.

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Purple
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Red.

Red.

Purple

Red.

Purple

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Red.

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Red.

Purple

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New Hardware Specialties.

The Globe Manufacturing Company, 926 Walnut street, Philadelphia, have issued a catalogue in which they call the attention of the trade to their various patented special-



Fig. 1.—Globe Scissors Sharpener.

ties, many of which they speak of as having no competition, and as articles of general need and usefulness. The catalogue contains a variety of articles suitable mostly for household use, two or three of which are shown in the illustrations which we give herewith. Fig. 1 represents the Globe Sciences Sharpeng. It consists of small me sors Sharpener. It consists of a small me

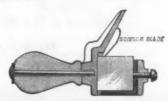


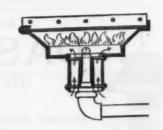
Fig. 2.—Sectional View of Scissors Sharpener.

tallic case inclosing an adjustable cubical sharpener of Washita oil-stone, against which the scissors blade is rubbed, being which the scissors blade is rubbed, being kept at the requisite angle to give a good edge by an inclined guiding face. The sharpener is also provided, it will be seen, with a handle by which it is held. When one edge becomes worn the stone can be turned to present another face by loosening to the cut. Of these calks the manufacturers are making the leading sizes in three lengths are making the leading sizes in three lengths.



Fig. 3.—Toaster for Gas Burner.

and adjusting the screw. And, as each stone has 24 edges, it will last a long time if carefully used. New stones can be inserted when the old one becomes too much worn, as the manufacturers keep Arkansas and Washita stones on hand, and can furnish them Washita stones on hand, and can furnish them at small expense. The construction of the sharpener is readily seen from the sectional



cissors blade is held during the process of

sharpening is indicated in Fig. 2.

The same manufacturers are making a Toaster which they designate as the Globe



Fig. 5 .- Toaster for Gas Stove.

Radiant Heat and Gas Stove Toaster.



wise more secure. This cuff has a stop catch in the lock, which is operated with the thumb by a button on the outside of the case, as indicated in the illustration, by means of which it can be used as a ratchet cuff or not, at the pleasure of the officer. The stop catch, it is claimed, prevents their being locked by the suniformly browned and without hardening the interior of the bread. It is intimated also that the article can be given a wider range of usefulness by removing the wires and inserting a tin or pan, when it is claimed

if it does the work satisfactorily, will be is a much lighter and better-looking cuff,

readily appreciated by our readers.

Fig. 6 represents the Globe Combined
Detachable Handle, Tack Puller, Hammer,
Screw-Driver and Kittle Scraper which comprehensive title, we are informed, does not fully represent the range of use for which this article is designed, and it should be added that it is further intended as a stove lifter and for use around cooking stoves. Its construction is shown in the cut, its length being 8¼ inches. It is finished in bronze or japan, and packed in paper boxes of one dozen each and in cases of 12 dozen.

The Perkins Toe Calks.

The Rhode Island Horse Shoe Company, Providence, R. I., for whom Durrie & Mc-Carty, 97 Chambers street, New York, are agents, are offering to the trade the Perkins New Chisel-Pointed Center-Prong Toe Calk, New Chisel-Pointed Center-Prong Toe Calk, which is represented in the accompanying cut. The prong, it will be perceived, is in the center of the calk, and is in position to be driven into shoe at a point where there is solid iron to hold it, and where, it is claimed, it cannot split the crease or tear out the toe nail holes. The liability of burning the toe of the shoe when giving a welding heat, it is also claimed, is much reduced. The shape of the prong is such as to allow it to be easily faction with which they are regarded. the prong is such as to allow it to be easily faction with which they are regarded.

that light cooking may be done over the ordinary gas burner. The same principle is carried out with the toasters for gas stoves and ranges. The convenience of this article, whether it be large or small; that the result whether it be large or small; that the result





The Perkins Chisel-Pointed, Center-Prong Toe Calks.

—short, medium and long. The medium length corresponds in size to the calks now on the market. With this variety of sizes they announce that they are enabled to furnish calks, both toe and side, for all styles, sizes and weights of horse and mule shoes. The calks are packed either in the usual 25 pound wooden boxes or in 10-pound paper boxes, packed in 100-pound wooden cases. For the convenience of the trade

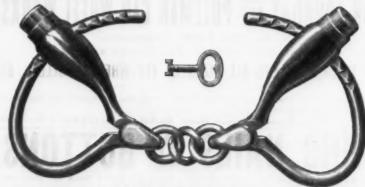
different colored labels are used for the blunt and sharp calks, green designating the blunt and yellow the sharp. From the fact that the Rhode Island Horse Shoe Company manufacture these from the raw material, they claim that they are enabled to furnish a first-





Fig. 4.—Bean's Patent Twisters.

number of them were made by



made in three styles, one shown in Figs.
and 4 for a simple gas burner; one shown in Figs. 5, without the legs, for ranges and coal stoves, this latter being designed to allow toast to be made without interfering with the draft of the fire. The gas-burner toaster shown in Figs. 3 and 4 consists simply of a thin removable copper plate supported on the burner, adapted to give great heat with no smoke. The bread to be toasted lies upon the case of the cuffs, but is concealed in the case of the cuffs, thus rendering it difficult to break the lock and making it otherwise more secure. This cuff ward or forward it is immaterial; that the ward or forward it is immaterial; that the key slot is easy to get at and in the front, where, it is intimated that for the safety of the officer it should be, as he can insert his two sharp angles or corners; that the cuffs are round to sha

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that it should be held in the hand, with the open part up, with the upper end of the handle between the forefinger and thumb, the other fingers being upon the lower end of other lingers being upon the lower end of the arm. Then, after securing the prisoner by the action of closing, the hand brings the movable part of the hook firmly against his wrist, thus holding him secure. The mova-ble part of the hook is instantly thrown open by the coil spring around the pin that holds the two parts of the hook together, so that the officer can release his prisoner by simply opening his hand. The manufacturers refer to this hook as preferred by many officers

The Twisters, which are made by the same manufacturers under the patent of Edward D. Bean, whose inventions are embodied in so many of the police goods which they make, are different, it is claimed, from all others, having, as represented in the cut, one open handle into which the other falls by the natural action of the hand, thus forming one solid handle on which the officer can get a much firmer hold than where the two handles are separate. The advantage of this contrivance, in the fact that the officer is not liable to cut his hands by getting the flesh caught between the two handles when making an arrest, will be appreciated, this objection having been found in the use of old-

The Henderson Furnace and Process.

The Henderson Furnace and Process.

The trials of this furnace and process which are being made at Bellefonte, Pa., have been thus far very satisfactory. The metal produced, which was rolled into boiler plates by Messrs. McIlvain & Sons, of Reading, was found soft and very ductile. Some of the samples tested by the Cambria Iron Company gave a tensile strength of 67,000 pounds per square inch, with 36 to 42 per cent. contraction of area and 22 per cent. elongation. In these trials a sand lining was used, which necessitated the use of Bessemer pig iron. The following facts concerning the process, which were forwarded to us, testify to its economy: With continuous working 25 casts of soft steel analyzing .12 to .16 per cent. carbon are made in 24 hours from a charge of half pig and half scrap steel (crop ends), with 5 to 10 per cent. of Lake Superior ore With the lesser amount of ore the average waste in a week's work was 2.38 per cent.—that is, the amount of steel produced was but 2.38 per cent. less in weight than the weight of the pig and steel scrap charged. Using the larger proportion of ore in the charge, the average waste for one week's work was .71 per cent. With 2-ton charges the coal used averaged 560 pounds per ton, Pennsylvania gas coal being used in the gas producer. With 2-ton charges the coal used averaged 550 pounds per ton, Pennsylvania gas coal being used in the gas producer. The slag contained, according to an analysis of Prof. Morrell, of Johnstown, 34 per cent. of metallic iron, with no more phosphorus than was originally present in the ore, so that the slag is as valuable for future smelting as an ore of similar chemical analysis. It thus appears that there is as much iron produced in the form of ingots and in the slag as was present in the charge of metal and ore, while the iron in the slag can be recovered by smelting. In the week ending October 28, 25 casts of soft steel were made in 120 hours. The metal was charged at 2.45 p. m. Monday, The metal was charged at 2.45 p. m. Monday, and the last cast was made Saturday at 3.30 p. m. Using Cornwall pig which con-tained .80 to 1.25 per cent. of copper, better results were obtained as to quality of metal

produced. The next trials will be made on sand and lime linings, using pig and sand ore without scrap.

The Eads Ship Railway.—Capt. James B. Eads has placed a model of his proposed Tehuantepec ship railway on exhibition in the warerooms of the Union Switch and the warerooms of the Union Switch and Signal Company, at Pittsburgh. The arrangement it said to be strikingly simple. By it a miniature ship is lifted from the water by a pontoon sunk below the surface immediately under the vessel, which, when in position, rests in a cradle, in which it is ready for transportation by rail. Rails are laid on the pontoon, which, when elevated, fit exactly to those on the land. The proposed pontoon as designed is 450 feet long, 75 feet wide and 15 feet deep. The railway across the isthmus will be 134 miles long, will cost about \$80,000,000 and will save \$250 miles of travel. Some 40 of the stockholders of the company are Pittsburgh capitalists.

Richards & Hartley and Challinor & Taylor, Pittsburgh, will start up their new flint-glass factories at Tarentum soon. A large number of glassworkers from the South Side go to Tarentum to work there

CONTENTS.	PAGE.
A New Form of Regenerative Furnace.	llus-
trated	1
Water Balances for Hoisting Coal	5
Methods of Obtaining Caspian Crude Oil	7
Early Steel Sword Found in a Swiss Lake	7
A Difficult Task Accomplished	7
Boring with Compressed Water	7 7 7
Mexican Railways	9
Postal Treaty with Mexico	9
On a New Method of Heating the Regeneral	dve-
Gas Furnace	
New Inventions	
A Judicial Decision on "Futures"	15
The Pennsylvania Store-Order Law	15
Editorial:	
Government Land Sales	16
The Extent of Our Iron and Steel Indust	
The Cost of Making Steel Rails	16
Fluctuations in Trade	16
An English Railroad Scare	16
Our Shipping Interests	16
The Decline in Tin	17
The Present Condition of the Swedish-Iron	
dustry and Its Connection with Ameri	can
Trade	17
The Iron Age Directory	
Trade Report.	10
British Iron and Metal Markets	21
Financial.	
Metal Market	
Philadelphia	
Pittehangh	(9)

Old Metals, Rags, &c.
The Illinois Inventors
Washington News
New Publications:
The Iron and Steel Works of the United
States, 1884.
Ingenieur Kalender für Maschinen und
Hütten Techniker, 1885.
Our Dormant Shipping Interests.
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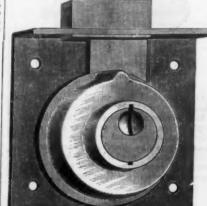
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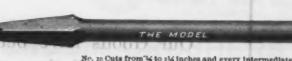
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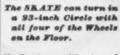
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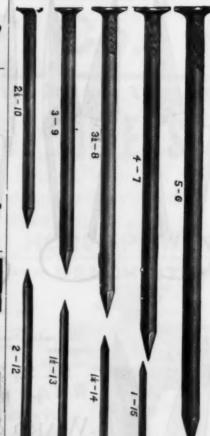
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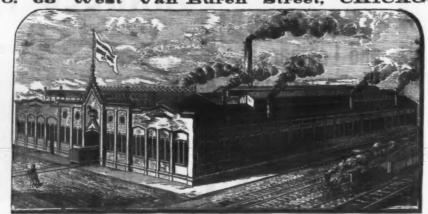
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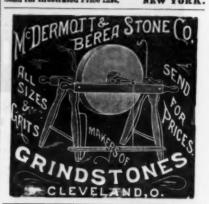


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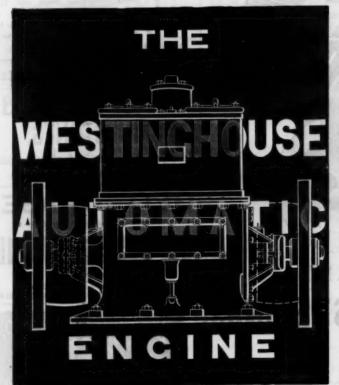
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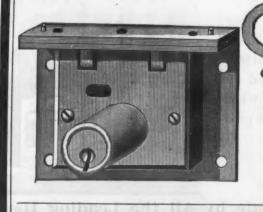
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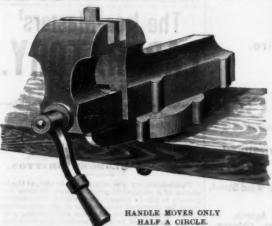
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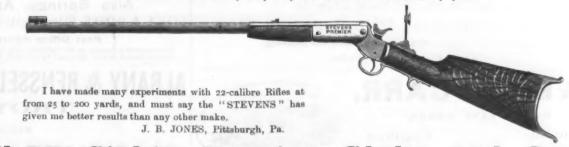
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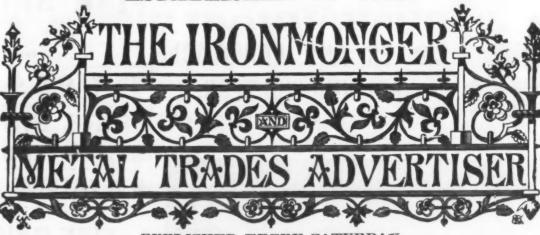
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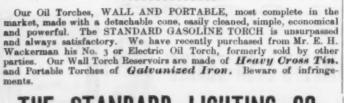
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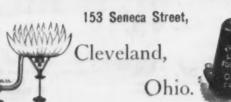
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And Furnace Blocks. DRAIN PIPE AND LAND TILE, Woodbridge, - - N. J.

BORGNER & O'BRIEN,

BRICK

Edge Pressed Furnace Blocks. CLAY RETORTS, TILES, &c., Twenty-third Street,

PHILADELPHIA. Twenty years' practical Experience

WOODBRIDGE CLAY MINING & REFIN'G CO. Woodbridge, N. J. Spa Spring Station, P. R. R. N. J

MANUFACTURERS OF FIRE BRICK.

S. G. PHILLIPS, Pres., WM. H. LIVINGOOD, Sec. & Treas., Woodbridge, N. J. Reading, Pa.

WATSON FIRE BRICK CO., Established 1836.

ccessers to JOHN R. WATSON, Perth Amboy, New Jersey,

Manufacturers of

FIRE BRICK, FOR ROLLING MILLS, BLAST FURNACES, FOUN-DRIES, GAS WORKS, LIME KILNS, TANNERIES, BOILER and GRATE SETTING, GLASS WORKS, &c. Fire Clays, Fire Sand and Kaolin for Sale,

TROY FIRE BRICK WORKS, TROY, N. Y.

James Ostrander & Son, Established 1848. Manufacturers of

FIRE BRICK Tuyers, Tiles, Blast Furnace Blocks, &c. Miners and Dealers in Woodbridge Fire Clay and Sand, Staten Island Kaolin.

ESTABLISHED 1864.

JAMES GARDNER, Successor to GARDNER BROS.,

MANUFACTURER OF "STANDARD SAVAGE" FIRE BRICK, TILE & FURNACE BLOCKS,

OF ALL SHAPES AND SIZES Miner and Shipper of "Mount Savage" Fire Clay.
WORKS, Ellerslie, Allegheny Co., Md.
MAIN OFFICE, Cumberland, Md., P. O. Box 93.
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S. M. Hamilton & Co., Agents, Baltimore, Md.

UNION MINING COMPANY. Mount Savage Fire Brick.

EDWARD J. ETTING, Agent, 999 South Third St., Philadelphia, Pa



Self-Binders for The Iron Age.

NEWBURGH, N. Y.



We are now prepared to supply our subscribers with an excellent self-binder for their papers, a cut of which is annexed. We call attention to the low prices at which it is offered. Address all orders to

DAVID WILLIAMS, 83 Reade Street, New York.



Prouty's Patent PEERLESS FORCE PUMP.

Has Self-Adjustable Foot Rest.

NEW AUTOMATIC COMPENSATING PACKING.

It will throw a continuous jet FROM FORTY TO SIXTY FEET. A new pattern jet and spray nozzle is sent with each

Especial attention is called to the material and workmanship exhibited in these pumps.

THE NEW ENGLAND BUTT CO. PROVIDENCE, R. I.

NEW YORK OFFICE, 99 Chambers St.

No.1"ECLIPSE" PIPE MACHINE HAND PIPE-CUT IS JUST THE TOOL FOR PLUMBERS AND FITTERS. ful, easily carried PIPE MACHINES No. 2 CUTS Cheap.

The F. F. ADAMS COMPANY, Erie, Pa. THE LATEST THING OUT.



IDEAL MOUSE TRAP. So perfectly simple in const-uction there is nothing to get out of order, as is the case with all other traps made on this principle. Guaranteed to give perfect satisfaction. Send for sample gross and you will not have any other trap that catches mice alive. The loventor of the Ideal invented all of the leading traps in the market today, and he says this one is perfection. Great care is taken in the manufacture of the Ideal, and every trap is perfect. A single trap for inspection will be sent by mail upon receipt of soc, in stamps.

The Cyclone Mouse Trap.

We invite the attention of dealers of this "Novelty" in Mouse Traps. later of the first of the f



West's Patent Steel Wire Ice Creepers.



NO SCREWS OR STRAPS REQUIRED. Easily attached to either Shoes

WEST, No. 1940 Columbia Avenue PHILADELPHIA

Satisfaction guaranteed if used according to directions, viz.: Push cording to directions, viz.: Push into position. In taking off, spring open clip "C" same as dotted line "D."

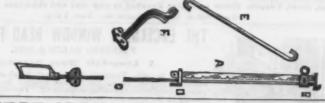
For Sale by the Hardware Trade.

Send for samples and prices.

HE REIHER SELF-LOCKING, IMPROVED TRANSOM LIFTER. THE BEST LIFTER ON THE MARKET.

Needs no Set-Screw and is Always Locked. The Best Paying Thing the Jobber can Handle, Send for Catalogue and Price List to F. A. REIHER & CO., Manufacturers,

Nos. 11 and 13 So. Canal Street. CHICAGO, ILL.



SIDING. CEILING.

or Siding or Roofing for Elevators, Mills and Factories. Paneted and Crimped Iron Celling. Durable, Attrac nd for Prices and Circulars to

A. NORTHROP & CO., 97 First Ave., PITTSBURGH.

October 30, 1884.	
PHILADELPHIA.	
Lloyd & Supplee Hardware Co.	1
Term:, 30 days. For 60 or 90 days, interest added at 8 per cent. per annum. Anvils. Peter Wright's, \$\Phi\$ \$\mathrm{B}\$	
Anvils. Peter Wright's, \$\psi\$	
Axes. Hunt's Kentucky and Yankee, \$\psi\$ dos. net \$7.00 Robert Mann, \$\psi\$ dos. net 7.00 Richland Chief 7.00 Beveled Axes add 50¢ Double Bit Axes, net \$12.00 Augers and Auger Bits.—New List, January 7. Bates' Nut Augers	
Augers and Auger Bits.—New List, January 7. 1880. Bates' Nut Augers	
Bates' Nut Augers. dis 60 \$ Cook's Augers. dis .60 \$ Watrous' Ship Augers. dis .50 \$ Watrous' Ship Augers. dis .15 \$ Benjamin Pierce Auger Bits. dis .40 \$ New Haven Copper Company dis 60 \$ Snell's Augers and Bits. dis 60 \$ Snell's Ship Augers dis 15 \$ Cook's a Auger Bits. dis 15 \$ Cook's a Auger Bits. dis .15 \$ Cook's Auger Bits, new list Jan. 1, 1834. dis26 \$ Bonney's Fat. Hol. Augers, list \$48 \$ doz. dis. 40&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&10 \$ Steams Fat. Hol. Augers, list \$48 \$ doz. dis. 20&210 \$ Steams Fat. H	
Balances.	
Gt. Western & Kentucky Cow, new listdis. 70 % Bering Machines Upright, without AugersList, \$5.50 dis50&5 % Angular, without AugersList, 6.76 dis50&5 %	
0t. Western & Kentucky Cow, new list dls. 70 \$ Boring Machines Upright, without Augers List, 85.50 } dls 50&5 \$ Angular. without Augers List, 6.76 } Belts.—Eastern Carriage Bolts. new list, June 10, 1884 dls. 75&12 \$ Philadelphia Carriage Bolts new list, dls. 75&10 \$ Stanley, Wrought Shutter dls. 50, 10&10 \$ Braces.—Barber's dis. 40&5 \$ Backus dls. 50&5 \$ Spofford dls. 50&5 \$ American Ball dls. 55 \$ dls. 50&5 \$ American Ball dls. 55 \$	
Braces Barver's. dis. 40&5 5	
Wrought Narrow Past dis. 558210 @ 55210210 %	
Wrought Loose Joint. dis. 60&2% @ 60&2% & 60&2% & 10 % Blind Butts. Parker. dis. 75&12 & 6. Clark. dis. 75&10&2 % Shepard. dis. 75 & 1. Lull & Porter dis. 80&10 & 75 & 1. Lull & Porter dis. 80&10 & 6. Huffer's. dis. 50&5 & 6. Plate dis. 50 & 55 & 6. Casters.—Bed (new list July 1, 1880) dis. 50 & 55 & 6. Casters.—Coll. List June. 18 & 1. Lull & 1. Lulle. 18 & 1. L	-
Galvanized Pump	The Personal
Calvanized Pump. B 0 6 5 5 5	
# B	
Drawing Knives.	
Adjustable Handle	
Nicholson	
Butcher Fluting Machines. Eagle—34 in roll	
Crown—8 in. roll	
Disston Loop Handles Cross-Cut33¢ pair net Boyrton Loop Handles Cross-Cut33¢ pair net Hatchets.	
Hunt	
& Blued & Pt'd.31 28 26 25 24 23 dis 25&10 \$ Clinton	
"Pol'ed & P't'd. 24 23 21 20 19 dis 20s.109 Saranac	
National	
# dos. #18.00 20.00 25.00 dis 00 % No. 64 65 dis 00 % Lanterns. large list, net; amail list, net Tubular. No. 0, \$7.50; No. 1, \$9.00 \$\psi\$ dos. net	
Guards, 40g extra. Law Mowers.—Pennsylvania	
Mattecks. Long and Short Cutternew list, 50&10 % Pennsylvania Pattern	
Melasses Gates. Enterprise Mg. Co.'s Measuring Faucets.dis. 30&10 5 Stebbins' Gates. dis. 70&10&2 5 Lincoln's Gates. dis. 70&10&2 5 Landers, Frary & Clark's Petroleum. dis. 70&6 5 Landers, Frary & Clark's Petroleum. dis. 40&5 5	
Cork Lined Cocks dis. 70 st	
Stuffers dis. 40 Enterprise Stuffers dis. 20 Enterprise St	
Alia Section	-
Hazer Streps. Lamont Combination	
Rules, -Stanley Boxwood. dis. 75&10&10 <	
Custers	
Sharpened Hand Banel and Rin dis \$8.00	
Cross-Cut Patent Tooth dis 45&10 % Cross-Cut Patent Tooth dis 45&10 % Cross-Cut Patent Tooth dis 45&10 %	
Shevels and Spades. dis 17% 5	
Washita Extra.	

crews. Flat Head Iron	dia 25 d
Flat Head Brass.	dis 75 %
Round Head Brass	dia 65 %
Round Head Iron	dis 70 %
poons.	
Plateddis	50&5&5 %
German Silver. Britannia, Boardman's.	dis 40&5 %
Britannia, Parker's	dis ou %
Tinned	dia 10 %
pringsTorrey	dia 50 %
Springs.—Torrey. Gem No. 3 small Japanned\$2.00 } Gem No. 2 medium Japanned	No 50910#
Gem No. 2 medium Japanned 2.75	TER OUGETO %
Other Standard Springs. Warner Door Springs, # doz. \$2.50	IIB BUNCTO %
Standard Spring Hinges	(40 %
warner Door Springs, # dos. #2.50 Standard Spring Hinger— Single No. 0, # dos. net. Single No. 1, # dos. net. Single No. 1, # dos. net. Cher Standard Spring Hinges. districts and Dies.	\$1.95
Single No. 1. W dog, net	1.50
Other Standard Spring Hingesd	is 25 & 10 %
tocks and Diesdis	10 and 5 %
Stove Polish.—Gem F gross, \$4	.50, dis 5 %
Dixon6.	00, dis 10 %
Fire Fly\$3,00	gross, net
Shoe Nells 4 % and over 74	lis 30&10 %
Shoe Nails—91/8 and under 84	10 %
Packs. Shoe Nails 4-8, and over, 7¢ Shoe Nails 3-8, and under, 8¢ Double Pointed Tacks. Traps.	de 700 10 s
Praps.	THE POSETO Y
Genuine Oneida-Newhouse	dis 35 %
im. Uneida—Newhouse list. First qual	11a (30&10 S
Viscs.—Solid Hox. Trenton new list di	g 45 @ 50 g
WrenchesAgricultural	dis 75 %
Coes' Genuine. Coes' Mechanics'	.dis 60&3 9
Coss' Mechanics ' Wall Day	0021023 7
Wire.	TIP (OCCIO)
Bright or Annealed, No. 0 to 18	dia 6734 1
Bright or Annealed, No. 19 to 26	dis 70 1
Bright or Annealed, No. 27 to 36	dis 75 9
Coppered, 0 to 18	. dia 6244 s
Tinned Broom Wire	dis 621/2 9
Galvanized Barb Wire	
Painted Barb Wire. Galvanized. No. 7 to 18Market List, dis	40012 0 800
Wringers,	#179 (B 00)
Peerless No. 236	
Peerless No. 2	
Universal No. 244 90.00:	dozen lota
	\$3,00 per
Novelty No. 2, for common tubs 30.00	dozen.
Excelsion P. for stationary tube 34.50	donesi.
Novelty No. 2, for common tubs. 30.00 Novelty No. 3, for common tubs. 30.00 Novelty No. 3, " 34.50 Excelsior E, for stationary tubs. 39.00 Excelsior F " 43.50	
43.50)	

Marshant Jan

Merchant Iron.
TERMS.—Note or acceptance at 60 days, with currer rate of exchange on New York, or a discount of 2 cent. for cash, if remitted within 10 days from date invoice.
For fluctuations and discounts on car rates see weekly Pittsburgh Trade Repor The following are card rates. Flat Bar.
114 to 4 by 14 to 1 Inch
454 to 6 by 154 to 114 2.1 154 to 6 by 154 to 154 2.1 154 and 154 by 54 to 54 2.1 and 154 by 54 to 54 2.2
1% to 6 by 1% to 1% "
134 and 136 by % to % " 2
1 and 11 by 16 to 16 "
% % and % by % to % inch
Rounds and Squares.
1 to 18/
1 to 1%
2 to 24
2% to 3% 3.0¢ % 3.5¢ 6-16 3.
3% to 4
434 to 5, 4.0% 14
% to 34
Oval Iron.
% to 114 2.9¢ 14
28 00 128

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00	29	85	**	131	und	14			
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00	112	to 91	by	24 m	nu a	01-0	Inc.	п	0.0
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	84	to	Z hy	22.0	nd !	5 18	66	***	*
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	97	and	11-16	by	16 to	0 3-1	6		
s et	1 37	and	11-16	by	No	. 11	and	1 12	1
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% 75	1 5%	and	9-16	by 1	106.	11 :	and	12.	
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75	36	inch	DF 1	NO6.	11 4	and	12.	****	
			NT			H	oop	In	99
et	124	to 6	Nos	. 13,	14	and	10		
et	124	to 2	Nos	. 10,	17	and	18.	****	*
	173	40 0	No.	18.	****	****			•
*	1 429	to 9	No.	01					* *
3 %	177	to 2	No.	00			***		* 9

% to 136 by 5-16 to 3

net 10.50 net 17.00	13-16
	M. No
60&2 % dis 45&2 % dis 45&2 %	NNN
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dis 50 %	11-16
00 dis 60 %	11-16 11-16
	54, N
all list, net ₽ doz. net	NEWN
new list, dis 30&5	64. N
A8 %	9-16, 9-16,
00, dis 10 s	9-10,
st, 50&10 %	9-16, 9-16,
11s 50&10 K	14 inc
is. 10&10 % 70&10&2 %	in i
is. 70&10 %	2 inc
dia, 60 %	The

ers, Frary & Chark's Petropound Liquor Cocks, new list Jan. 1, 1880dia. 60 % Lined Cocksdia. 70 %	The prices under Hoop Iron do not apply to Cotton Ties.
Cutters	1-10¢ # B extra will be charged for each gauge
e contraction of the contraction	1-10¢ # a extra will be charged for cutting Hoops to specified lengths. Barrel Hoops.
new list, dis. 60, 10&2 cash	11/2 to 2 in., cut to length.
Sandusky Tool Codis. 20210	8 m and less than 9 m, \Pset of 6 hoops
and Auburn	All Iron, including Tire

man an earl annual mannage and	Tank Iron		
No. 9 and heavier			3.3
Plow Slabs			8.5
Plow Wings		**********	8.8
10 N 1 N 1			
	Common.	Charcoal.	Juniate
Nos. 10 to 14	3.5¢	5.0∉	6.5
Nos. 15 to 17	3.84	5.3¢	6.8
Nos. 15 to 17 Nos. 18 to 21	4.10	5.6#	7.1
Nos. 22 to 24	4.3¢	5.84	7.8
Nos. 25 and 26	4.0€	6.0∉	7.5
No. 27	4.76	6.20	
No. 28	5.1∉	6.6€	8.1
All sheets No. 18 a		over 30 incl	hes wide
not less than 2.10¢ ex	tra.		
Wood's Pr	stent Plant	shed Sheet.	
st quality (A)			9.0
Galvanized C. H. B.	-(Charcoa)	Hammered	Blooms.)
Nos. 14 to 20	124 No. 5	27	15
CONTRACTOR OF THE PARTY OF THE	204 17- 6	20	2.0

..8.5#

Nos. 18, 14 and 15. Nos. 16, 17 and 18. Nos. 19 and 20. . . .

ist quality (A) Galvanized C. B Nos. 14 to 20 Nos. 21 to 24 Nos. 25 and 26	12¢	No.	ualii 1 Hai 27 28	ty (B). mmer	ed	
50 @ 52% % disco	Oosi Sc 8.0¢	l 1 by	% b			
3, 3% and 4 1%, 1%, 2 and 23 1% inch	inch			******	****	
by 1 inch, for	Plow Ha	ndles				

A	Angle Iron.
Š	214. 3. 314 and 4 inch
۲	112 114, 2 and 214 "
	13 inch
	134 by 1 inch, for Plow Handles
¥	132 by % " " " "
1	184 by 84 " " "8.9¢
	T Rail.
2	8 lbs. to the yard2.9¢ 20 lbs. to the yard2.8¢
1	
	16 " " 28¢ 30 " " 28¢ Splice Joints for 12 16 and 30 B. Rail, 40¢ each; 28
	and 30-b. Rail, 50¢ each; 40-b., 60¢ each.
8	3% by % and % Spikes for 20 and 28-B. Rail3%
	212 and 3 by % " " 12 and 16-B. "4.0¢
	212 by 5-16 " " 8-D. Rail
Н	Flat Rails.—Punched and Countersunk.
Ŋ	11/4 to 2 by 1/4 to 1/4 inch
4	11 by % and 7-16 inch
ı	1% by %, 7-16 and % inch
d	Tuniate Nail Rods 0.56

2 by 16 to 16 inch		***	***	exx			**	1 10.3		*	ä
y % and 7-16 inch.										0.80	ė,
y % and 7-16 inch. y %, 7-16 and % inch	ch				**		6,81			* *	8
	-	_									
ata Nail Rods			28.00			558	08	0.00			
vay Nail Rods							**				ä
ray Nail Rodsd Iron, 3/23/23/2 ar d Iron 5/23/23/24	1d 361	36X	56.								
d Iron Mx x x 16	and h	(X3)	234			0001		00		0.00	.,
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der and Landside	Iron	0.00	0.00					0.0	0.0	0.0	
Beam Iron		0		091	0.0		225	0.0	0.0	0.0	4

See Pittsbu	rgh	Trad	le	ME	i	n.	il	le	t								*								
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Dil Well Steel Forgings. Machinery Steel.	
Crucible	Bessemer & Open Hearth
Ordinary Sizes, % to 2 inch Round	336¢ 436¢ 536¢
3-16 "	throughout the
Hammer Cast Steel. Crucible Cast Steel. Open Hearth Cast Steel. Sheet Steel.—Crucible.	
	Bessemer &

Besst. 3d Qual. 3d Qual. Open Heart To 21 gauge1t 10/2 10/2 If extra for each additional gauge. Cut to multiples or specified lengths, 1/6 extra. Miscollaneous Cast Steel.
Auger and Auger Bit
From Points and Plates
Frog Side Bars. Pick, plain (hammered).
Pick and Mattock, beveled (rolled

Skate Steel	
Table Cutlery, plain	
Table Cutlery, beveled	,
Pike and Cant Hook.	
Coal and Granite Wadge	
Coal and Granite Wedge	
Roller	
Spindle, subject to Machinery classification	
Trap Spring Steel	
Forged Crank Pins and Lathe Spindles	
Piston Rods, plain	
Forged Crank Pins and Lathe Spindles Piston Rods, plain Piston Rods, forged to shapes	
Porged Crank Pins and Lathe Spindles Piston Rods, plain Piston Rods, forged to shapes Slide Bars, plain	
Piston Rods, plain	

	since bars, forged to shapes
	Open Hearth or Bessemer
	Dollar Dine Des a state of Decatine
ı	Boiler, Fire-Box and Flue Sheets, not less than 3-16
1	
ı	Boller Fire Boy and Elec Ch.
1	boner, Fire box and Fine Sheets, not less than 14
ı	Boller, Fire Box and Flue Sheets, not less than 36
1	Circulars and semi-circulars, when ordered sepa-
3	Circulars and semi-circulars, when ordered sens.
1	rately
1	Conche Stack to show
1	Smoke Stack, to shape
ı	Locomotive Tank Steel
1	Locomotive Tank Steel
1	File Cast Steel.
1	Conema Dound Water Dound

Commo		E 840	D CHARL	Steel		
Square	, Round,	Half	Round	an	d Fla	t Basta
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Three	Agricu	Harmal	Immale	the street of	Cloud	Charl
Fork a	nd Daho	Correction	Ampre	ment	CHRI	steet.
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THE COMMETTE LIY CAME Steel		
Agricultural Implement Cast Steel		
Fork and Rake, Crucible	•	
Horse Rake Steel, cut to lengths, Crucible	E R 1	F X
The County of the steel, cut to lengths, Crucible		
Hoe, Crucible		
Beveled Hoe and Shovel Steel in Bars		*
Crucible Plow Steel in Slabs		
Craciole I low steel in sums	* *	
Bessemer and Open Hearth.		
Spring		
Spring spiral and taper, cut to lengths		
Tire 2.16 thick and above	5.5	**
Tire, 2-16 thick and above	* *	* *
Toe Calk		
Axle Billets	* *	*
Clotab Chas	* *	* *

Desemer and Open Hearth.
Spring spiral and taper, cut to lengths
Spring spiral and tanen out to landthe
Tons of the and taper, cut to longths
Toe Calk
Plow
Plow
Axie Billets
Sleigh Shoe
Clarkfow Chan
Cutter Shoe, cut to lengths and tapered416
Scytne Back Steet
Grain Drill Bars4
Grain Drill Points
Grain Drill Points
BOILING COURSE Blanks, cut and nunched 012
Thrasher Steel
Thrasher Steel
Rolled Hammer Billets
Rolled Hammer Billets. Terms.—Four months: 3 per cent, discount for cash
to manufated and the country to per cent, discount for case
if remitted within 30 days.
Rolls and Castings.
_ Acous and Challens

Furnace Floor and Straightening Plates	ij
Housings and Castings not otherwise specified 2	
Flide Plates	
Spindles and Coupling Boxes. Sand Rolls and Pinions, large size.	
Sand Rolls and Pinjons, large size	ń
Sand Rolls and Pinions, small size	į
Pipe Mili Castings	L
NOUSE MISS CASE DESCRIPTION OF A	
Spur and Bevel Wheels, large	ì
Spur and Bevel Wheels, small	
Pulleys up to 30 inches4	
Pulleys over 30 inches4	
Engine Castings, light	
Engine Castings, heavy	
Engine Castings, heavy	۱
6 to in. diam., to 20 in. long	Ĺ
8 to 15 in. diam., 8 to 40 in. long	i
25 to 24 in. diam., 15 to 72 in. long	i
14 to 31 in. diam., 72 to 108 in. long	ř
A Cham Chataban & dome	ø

After October 1, 1881, no discounts will be made settlement, as heretofore, prices quoted being net.
White and Red Lead.
Strictly Pure White Lead in Oil in kegs, 6%¢; in 25 Tin Pails, 36¢ # n over keg price: 12% n Tin Pai
16 W m over keg price; assorted, 1 to 5 m cans, 3¢ m over keg price.
Dry White Lead in barrels
Red Lead, very brilliant, in kegs and barrels
Freights equalized with all points where Wh
Lead is made.
Terms: Note at 60 days, or if paid within 15 da from date of invoice a discount of 2½ per cent. will allowed, but not otherwise.
Window Class

Macount,	60&10% on Single Strength, 60&20% on Double Prices current, \$\Pi\$ box of 50 feet.
	Single Strength.
13	

Inches	Sizes.	AA.	Α.	B.	C.
95	6 x 8 to 10 x 15	88.75	\$8.00	\$7.50	87.00
99	11 x 14 to 15 x 24	9.25	8.50	8.00	7.2
48	16 x 24 to 20 x 28	10.75	9.75	8.75	7.71
54	15 x 34 to 24 x 30	12,25	10.75	9.00	***
80	26 x 28 to 24 x 36	13.00	11.50	9.75	***
70	26 x 36 to 26 x 44	14.50	18.25	10.75	***
80	26 x 46 to 30 x 50	15,00	14.00	11.25	***
84	30 x 52 to 30 x 54			****	
90	30 x 56 to 34 x 56	****	****	****	***
94	34 x 58 to 34 x 60	****	****	****	***
00	36 x 60 to 40 x 60	****			***
	Double Strength.				7.50
MD.	6 x 8 to 10 x 15	18.25	12.25	11.25	10.50
an	11 x 14 to 15 x 24		13.25	12,50	11.2
88	16 x 24 to 20 x 28	17.25	15.75	14.00	***
04	15 x 34 to 24 x 30	19.75	17.25	14.50	***
00	26 x 28 to 24 x 36	21.00	18.50	15.75	***
70	26 x 36 to 26 x 44	23.25	21.25	17.25	***
80	26 x 46 to 30 x 50	24.00	22.50	18.00	* 6.5
200	30 x 52 to 30 x 54	25.75	23.25	19.25	***
PU 0.4	30 x 56 to 34 x 56	27.75	25.00	21.75	
PA OO	35 x 58 to 34 x 60	29.25	27.75	24.00	
w	36 x 60 to 40 x 60	33.25	30.00	27.75	***
					_

Sizes above - \$10 \$ box extra for every 5 incl An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length, and not making more than 51 united inches, will be charged in the 54 united inches bracket.

Hubbard,	Bake	well	de (le.'s	Goods.	
Axes, Single Bit.	Lippin	ncott.		D	er dos.,	87.5
Axes, Single Bit,	James	& Co.	******	D	er dos.,	6.
Axes, Double Bit	, Lippi	ncott.		pe	r doz., \$	13.0
Axes, Double Bit	, Jame	s & Co	A	pe	r dos.,	10.0
Drain Tools, list.					d16	120
Drain Tools, list. Hoes, Planters'. Hoes, Scovill Pai					ан	00
Hoes, Handled, S	tern.	France C	Lower		an	50
Handles, Cross C	quare	mye, c	rerma	Harris	er dor	80
Handles, Shovel,	Bont	Bornd	Dive	ted n	er dos.,	37 1
Saws, Circular	The sand	anoreu,	ALEYC	seup	die	45
Saws, Long					dia	40
Saws, Long Saws, Cross-Cut,	H. B. &	t Co., (Cham	pion. 1	er foot	
net						80.3
Saws, Cross-Cut.	Lippin	eott. (hamı	olon, r	er root	
net						00.5
Shovels, list					dis	200
Spades, list					din	200
Scoops, list						200

These sinks, being made of wrought steel, will not break from heat, cold, or any cause whatever.

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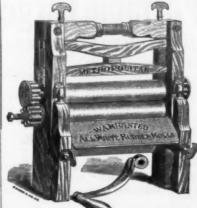
Full sized, bent tray, planed and well finished. Bolted securely to frame. The legs extend up ward, serving as a brace to the bowl, to which they are bolted; they are also bolted to handles. This Barrow has the Jacobs Patent Wheel, superior in every way to any iron wheel manufactured. The wheel revolves on a fixed axle bolt, similar to a buggy wheel. The axle bolt holds the barrow firmiy together. The Barrow for Railroad Contractors. Will outwear any other made, and displaces all others wherever introduced. Wheel painted. We also manufacture a full line of

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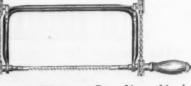
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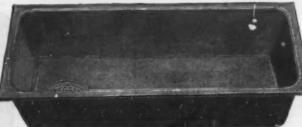


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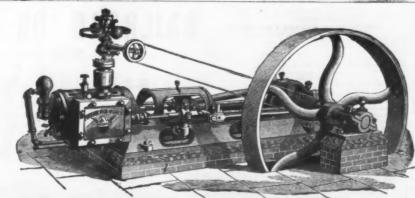
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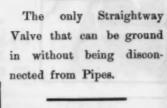
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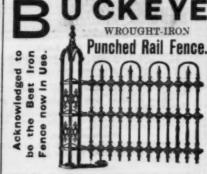
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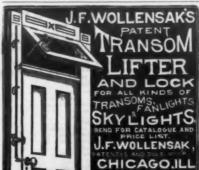
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 Cards.
 Watson's make Horse & Curry...dis 10 g | Rev. List.

 Watson's Cotton...dis 10 g | Aug., 1883.
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 Watson's Wool...dis 10 g | Aug., 1883.
 Aug., 1883.

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 Chain. Coll 3-16.... Coll 4.... Coll 5-16.... Coll 7-16... Coll 3-16.... # 10¢ # 10 73¢¢ # 10 63¢¢ # 10 63¢¢ ...# 10 6¢ Coll %.
Chalk.—White, Carpenter's....
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Crayons.
Chisels.—Peck, Stow & Wilcox.
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Buck's Chisels. .dis 60&10&10 . dis 50&10 g Cordage.—Manila, usual trade dis 1¢., Crow Bars.—Cast Steel...

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Handle. dls 40 g Steak Knives dls 40 g Lap Bolster, Oval Handle dls 40 g Sticking dls 40 g
Butcher, Common Round Handle, Wood'sdis 40 g Shoe Knives, Wood'sdis 30 g
Dividers.—Cook's dis 25 v
Dog Collars dis 20 %
Dog Collars.
Door Stops, Thurston's
Drawer Knobs, Thurston'sdis 50 %
DrillsMorse Bitt Stock dis 40 %
Emery.—Wellington Mills
Enameled Ware,— Standard Mfg. Co. Kettles
Felloe Plates,-Wrought P b
Files.—American File Co
Fluting MachinesKnox List, \$4.00dis 25 %
Forks.—W. C. & Co. Manuredis 50 % Eastern Tool Co.'s. Manuredis 60 %
Gimlet Bits.— Genuine German, No. 125, 1-32 to 8-82
Glass Cutters.—Combination Glass Cutter and Knife Sharpener
Grub Hoem.—K. P. & Co.'s No. 2, \$11.50 \(\psi \) doz. dis 50 & 16 \(\psi \)
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Hangers & Rollers.—Anti-Friction
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Hand Screws. dis 10 %
Hatchets.—C. F. Dowse, new listdis 35 % Underhill
Hay KnivesLightning ₹ doz \$18.00, net
Hinges.—Strap and T (new list)

Knobs.—"Norwaik.
Silver Glass Bell Pulls.
Silver Glass Bell Pulls. ₩ doz \$7.50 Lanterns,-Tubulars, N Lawn Mewers. Continental..... Quaker City..... .dis 40&10 9 # 16 %(c Lend.—Sheet. Pipe..... Locks.—Norwalk
Eagle Cabinet.
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W. Wilcox & Co., Padiocks Manure Forks.—W. O. & Co. Eastern Tool Co.'s....

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Tallore' Geese.
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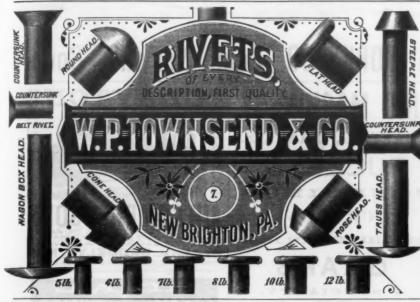
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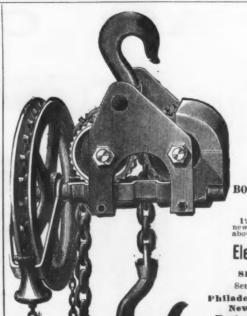




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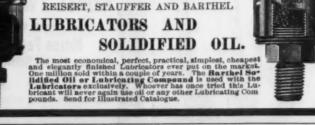


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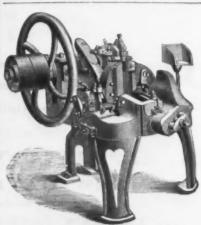
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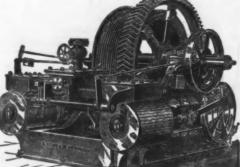


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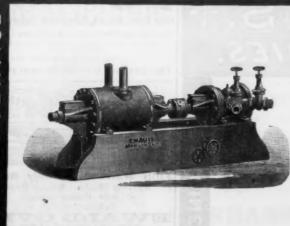
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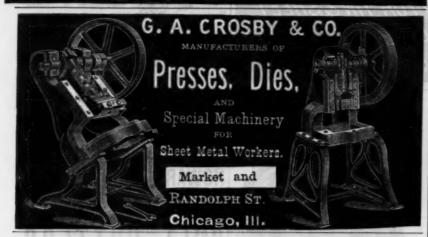
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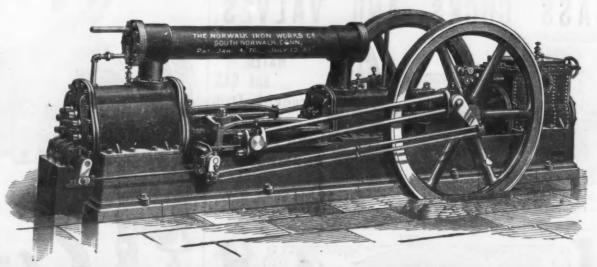
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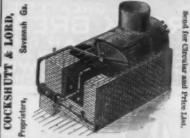


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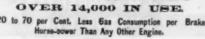
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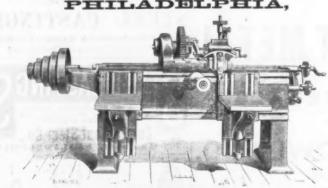
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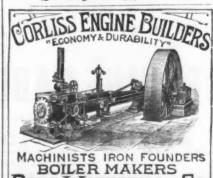
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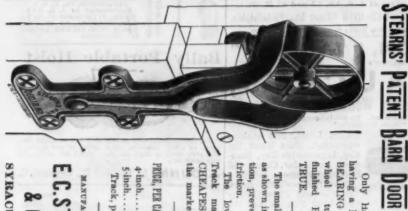
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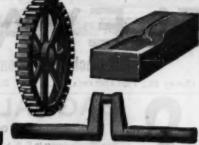
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